CITY OF OPA-LOCKA

The City of Bright Opportunities

SPECIAL COMMISSION MEETING
Agenda

Wednesday, November 20, 2024
6:00 PM

Commission Chamber
780 Fisherman Street, 3rd Floor
Opa-locka, FL 33054

City Commission
Mayor John H. Taylor, Jr.
Vice Mayor Natasha L. Ervin
Commissioner Sherelean Bass
Commissioner Joseph L. Kelley
Commissioner Veronica Williams

Appointed Officials
Interim City Manager Sha'mecca Lawson
City Attorney Burnadette Norris-Weeks
City Clerk Joanna Flores, CMC

NOTE: All persons speaking shall come forward and give your full name and address, and the name and address of the organization you are representing.

There is a three (3) minute time limit for speaker/citizens forum and participation at all city commission meetings and public hearings. Your cooperation is appreciated in observing the three (3) minute time limit policy. If your matter requires more than three (3) minutes, please arrange a meeting or an appointment with the City Clerk prior to the commission meeting. City of Opa-locka Code of Ordinances Section 2-57

DECORUM POLICY

Any person making impertinent or slanderous remarks or who become boisterous while addressing the commission, shall be declared to be out of order by the presiding officer, and shall be barred from further audience before the Commission by the presiding officer, unless permission to continue or again address the commission be granted by the majority vote of the commission members. City of Opa-locka Code of Ordinances Section 2-58

NOTICE TO ALL LOBBYISTS

Any person appearing in a paid or remunerated representative capacity before the city staff, boards, committees and the City Commission is required to register with the City Clerk before engaging in lobbying activities. *City of Opa-locka Code of Ordinances Section 2-18*

FLORIDA STATUTES, CHAPTER 285.0105

"If a person decides to appeal any decision made by the Board, Agency or Commission with respect to the proceedings, and that, for such purpose, that person may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based."

PROCEDURES FOR PUBLIC PARTICIPATION

How to watch the meeting

Members of the public can watch public meetings and public hearings at https://www.youtube.com/user/CityofOpaLocka

City Commission Meetings are held in-person while allowing virtual participation. Members of the public wishing to address the Commission may do so in person or virtually.

To participate virtually, please register by the meeting start time via the City of Opa-locka website at www.opalockafl.gov.

CITY OF OPA-LOCKA

"The City of Bright Opportunities"

AGENDA
SPECIAL COMMISSION MEETING
November 20, 2024
6:00 PM

1. CALL TO ORDER:

2. ROLL CALL:

3. INVOCATION:

4. PLEDGE OF ALLEGIANCE:

5. PUBLIC INPUT:
(agenda items only)

6. RESOLUTIONS:

1. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO REJECT THE BID PROPOSAL FOR REQUEST FOR PROPOSALS (RFP) 24-1009200, FOR ART IN THE RIGHT OF WAY SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

2. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO NEGOTIATION FOR ARTISTIC SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

3. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK SOURCEWELL CONTRACT #FL-R10-GC02-111821- SCD WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR QUALIFIED PROFESSIONAL SERVICES FOR GENERAL CONSTRUCTION SERVICES (SOURCEWELL IFB #111821), AND ENTER INTO AN AGREEMENT WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR LIFT STATION #9 REPLACEMENT PROJECT SERVICES, IN AN AMOUNT NOT TO EXCEED ONE MILLION, ONE HUNDRED FORTY-NINE THOUSAND, SIX HUNDRED THIRTY-NINE DOLLARS AND NINETY-THREE CENTS ($1,149,639.93); PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored for Interim City Manager*

4. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK SOURCEWELL CONTRACT #FL-R10-GC02-111821-SCD WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR QUALIFIED PROFESSIONAL SERVICES FOR GENERAL CONSTRUCTION SERVICES (SOURCEWELL IFB #111821), AND ENTER INTO AN AGREEMENT WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR LIFT STATION #16 REPLACEMENT PROJECT SERVICES, IN AN AMOUNT NOT TO EXCEED NINE HUNDRED FORTY-NINE THOUSAND, FOUR HUNDRED EIGHTY-FIVE DOLLARS AND NINETY-SEVEN CENTS ($949,485.97); PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

5. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO ACCEPT THE PROPOSAL OF SSN ENGINEERING, LLC FOR SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING SERVICES, PURSUANT TO RFQ NO. 24-1011200 AND FURTHER AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO NEGOTIATIONS WITH SSN ENGINEERING, LLC FOR SAME; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

6. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO REJECT ALL BIDS FOR REQUEST FOR PROPOSALS (RFP) 24-1008200 FOR TREE AND PLANT INSTALLATION SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

7. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA- LOCKA, FLORIDA, ACCEPTING THE PROPOSAL OF SAFA CONSTRUCTION, LLC FOR CAIRO LANE & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT SERVICES, PURSUANT TO ITB NO. 24-1114200 AND FURTHER AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO AN AGREEMENT WITH SAFA CONSTRUCTION, LLC FOR SAME, IN AN AMOUNT NOT TO EXCEED FIVE MILLION, FOUR HUNDRED NINE THOUSAND, EIGHT HUNDRED SEVENTY-FOUR DOLLARS ($5,409,874.00) AND IN THE FORM ATTACHED HERETO AS EXHIBIT "A"; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

8. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, APPROVING THE USE OF CITY RESOURCES TO SUPPORT THE OPA-LOCKA COMMUNITY DEVELOPMENT CORPORATION, INC'S FIVE-DAY EVENT, "THE ART OF TRANSFORMATION" (THE "EVENT") TO BE HELD ON DECEMBER 4TH - 8TH, 2024; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by Interim City Manager*

9. **A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, ADOPTING THE ELECTION RESULTS OF THE CITY OF OPA-LOCKA'S GENERAL ELECTION HELD ON NOVEMBER 5, 2024, FOR THE PURPOSE OF ELECTING TWO CITY COMMISSIONERS, AS CERTIFIED BY MIAMI-DADE COUNTY SUPERVISOR OF ELECTIONS; PROVIDING FOR THE INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.** *Sponsored by City Clerk*

7. ADJOURNMENT:

For further information, please contact the Office of the City Clerk by telephone at (305) 953-2800 or email jflores@opalockafl.gov.

Sponsored by: Interim City Manager

RESOLUTION NO. 24-XXXX

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO REJECT THE BID PROPOSAL FOR REQUEST FOR PROPOSALS (RFP) 24-1009200, FOR ART IN THE RIGHT OF WAY SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Opa-Locka ("City") previously issued Requests for Proposals (RFP 24-1009200) to solicit competitive proposals for the American Rescue Plan Act (ARPA) funded project of Art in Right of Way; and

WHEREAS, one (1) proposal was received on October 8th, 2024, and certified by the City Clerk; and

WHEREAS, the Interim City Manager is proposing that the City Commission reject the bid received for Request For Proposal (RFP 24-1009200) related to Art in Right of Way Services as the sole bid was not in compliance with the Request For Proposal (RFP) requirements; and

WHEREAS, the City Commission has determined that authorizing the City Manager to reject the sole proposal received for RFP 24-1009200 for Art in Right of Way Services is in the best interest of the City and its residents.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA:

Section 1. Recitals Adopted.

The recitals to the preamble herein are incorporated by reference.

Section 2. Approval to Reject Bid. The City Commission of the City of Opa-Locka hereby authorizes the City Manager to reject the sole proposal received for RFP 24-1009200 for Art in Right of Way Services.

Section 3. Scrivener's Errors. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors, which do not affect the intent of this Resolution may be authorized by the Interim City Manager, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. **Effective Date.** This Resolution shall take effect immediately upon adoption by the City Commission of the City of Opa-Locka.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____ (Yes)	_____ (No)
Commissioner Kelley	_____ (Yes)	_____ (No)
Commissioner Williams	_____ (Yes)	_____ (No)
Vice Mayor Ervin	_____ (Yes)	_____ (No)
Mayor Taylor	_____ (Yes)	_____ (No)

City of Opa-locka
Agenda Cover Memo

Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**			
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**
				X			
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		**X**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**
							X
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**				
		X	**24-1009200**				
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:**		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*		
	X		**Enhance Organizational** ☐ **Bus. & Economic Dev** ■ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐				
Sponsor Name	Interim City Manager		**Department:**		City Manager		

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA AUTHORIZING THE INTERIM CITY MANAGER TO REJECT THE PROPOSAL FOR RFP 24-1009200 FOR ART IN THE RIGHT OF WAY SERVICES AND AUTHORIZE THE CITY ADMINISTRATION TO ADHERE TO FS 287.057 FOR ARTISTIC SERVICES AND ENTER INTO NEGOTIATION WITH ARTCODES LLC

Staff Summary:

The City Commission approved the issuance of RFP No. 24-1009200 to solicit competitive proposals for the ARPA funded project of Art in Right of Way Services. One (1) proposal was received on October 8th, 2024, and certified by the City Clerk. A request is being made to

reject the proposal because the single proposal was not in compliance with the Request For Proposal (RFP) requirements.

The bid document was submitted by The Street Plans Collaborative, Inc. There was only one follow-up question, which was addressed in Addendum #1.

The City Administration believes it is in the best interest of the City to reject this bid and enter into negotiations with ArtCodes LLC for Artistic Services which are not subject to competitive solicitation requirements according to the City Code of Ordnances SCC.2-318(4)(g) "Artistic services which are original and creative in character and skill in a recognized field of artistic endeavor such as music, dance, drama, painting, and sculpture, photography, culinary arts, fashion design and the like provided however, that contracts for artistic instructors, coaches, teachers, aides, and assistants are deemed contractual services subject to the requirements of competitive procurement"."

The City Administration is seeking authorization from the City Commission to enter into a contract for Artistic Services with ArtCodes LLC for City's Beautification and Cultural Enhancement not to exceed $125,000.

Financial Impact: The FY 2025 budget for Artscape is initially set at $31,500 in account 44-53839. Additional funds will be carried over from FY 2024 in Budget Amendment #1, bringing the total proposed allocation for Artscape in FY 2025 to $62,500. Should the cancellation of the Tree Planting RFP be approved, staff recommends combining the Artscape and Tree Planting funds, resulting in a total of $125,000 allocated to the Artscape account. This reallocation will also occur in Budget Amendment #1. There are no long-term, ongoing expenditures to the General Fund for this item

Proposed Action:

Staff recommends the City Commission approve the recommendation to reject the bids related to Art in the Right of Way Services and enter into a direct Agreement with ArtCodes LLC

Attachment:

Bid Certification for RFP 24-1009200- Art in the Right of Way
ArtCodes LLC Services Catalog of Services
Agreement between the City of Opa-locka and ArtCodes LLC
Addendum #1
Pre-Bid Meeting 9.19.2024



RFP NO: 24-1009200
CITY OF OPA-LOCKA
ART IN THE RIGHT-OF-WAY SERVICES

Tony Garcia, RA
Principal & Co-Founder
The Street Plans Collaborative, Inc.
6815 SW 57 Terrace, Miami, FL 33143
305-978-6426 | tony@streetplans.org
October 9, 2024

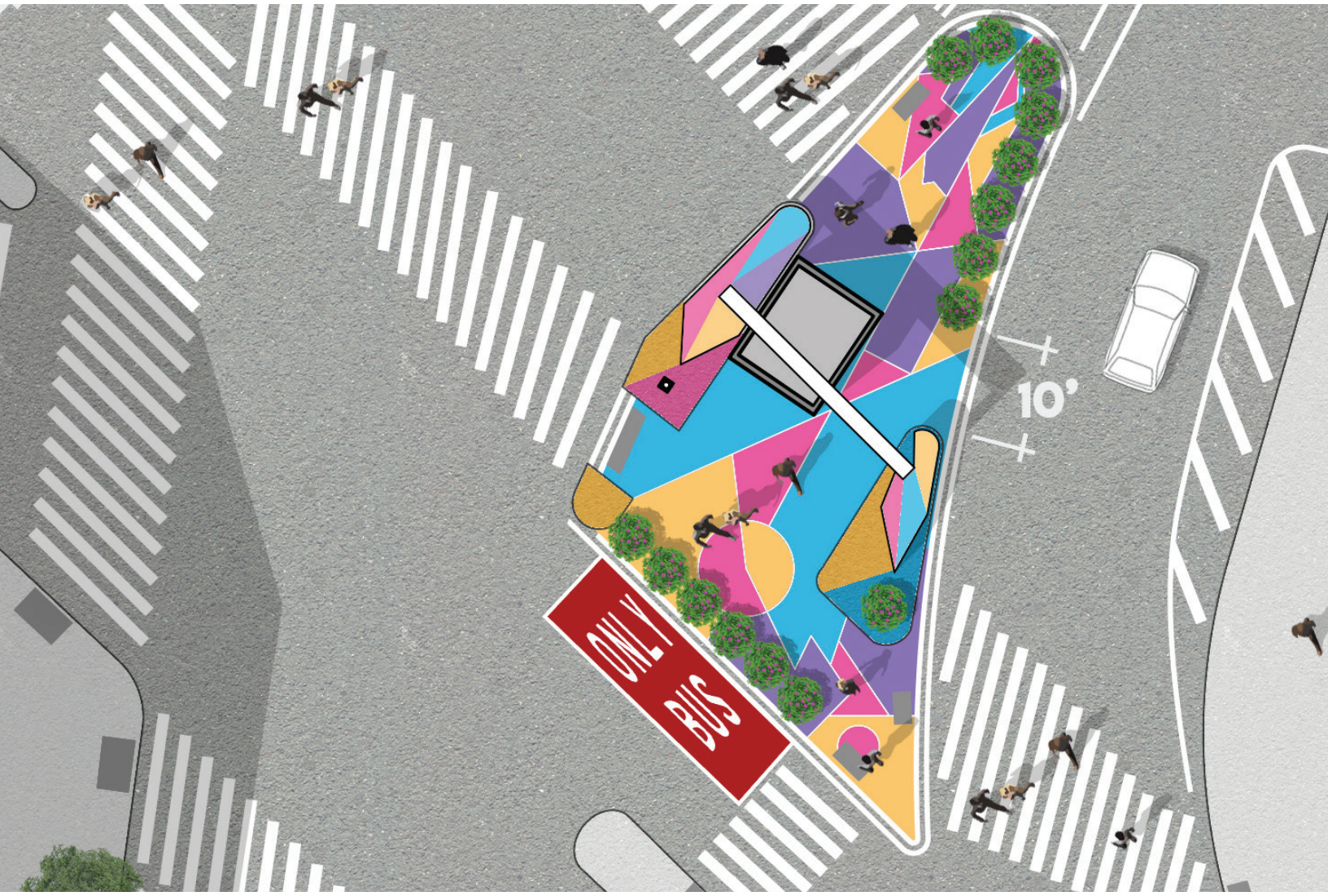
STREETPLANS

Tab 1 - Table of Contents



Fern + Tamarind Intersection Mural, West Palm Beach, FL completed as part of Street Plans' Tactical Urbanists Materials Guide Workshops.

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Tab 2 - Letter of Transmittal

An asphalt art installation at Biscayne Green in Miami, FL.

TRANSMITTAL LETTER

October 9, 2024

Dear Evaluation Committee,

Street Plans is delighted to submit a proposal for the City of Opa-Locka's Art in the Right-of-Way Services RFP. In addition to being recognized as a leading national expert in asphalt art, Street Plans has a long history of working with municipalities throughout Miami-Dade County and South Florida. Our firm was founded in Miami Beach, and our staff and principals have existing relationships with communities, city and county staff, and elected officials in the region that have taken almost two decades to foster.

We are a team of professionals committed to excellence and responsiveness. We offer a breadth of national, regional, and local experience and are passionate about creating safer streets that calibrate best practices to local contexts. We are also a team committed to conducting fun and engaging digital and in-person public outreach activities, and will work to build crucial buy-in, and ultimately support, from the Opa-Locka community.

For this effort, our project team will perform a thorough review of the City's past and current projects, including the current SS4A Action Plan, to help identify a location for asphalt art that is appropriate. We'll then work with you and the community to come up with a design that reflects the culture and history of the city, and we'll work with you and community volunteers to implement the project.

Our core focus is rethinking and redesigning our streets as public spaces to serve people walking, biking and taking transit. To that end we use asphalt art to identify street space that can be repurposed for pedestrians, either in the form of curb extensions, a new pedestrian plaza or even an expansion of the sidewalk.

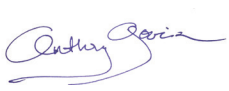
Through these efforts, Street Plans will help establish a public art presence in the City, engage and guarantee active community participation for this project, and create a new pedestrian space that reflects the spirit, history, and uniqueness of the City of Opa-locka.

We are well-positioned to offer this approach to the City of Opa-Lock to enhance the aesthetic appeal, cultural identity, and community engagement within the City, creating vibrant and visually stimulating environments that reflect the diverse community values.

We've assisted cities across the country with their own public art and infrastructure projects, and we know what it takes to best position our clients for success. We are excited to bring our experience back home to Miami-Dade County and help Opa-Locka create a work of art that will bring joy to the community!

Thank you for your consideration!

Sincerely,



Person Authorized to Make Representations: Tony Garcia, Principal & Co-Founder
Contact Information: tony@streetplans.org, 305-978-6426
Address: 6815 SW 57 Terrace, Miami, FL 33143
Legal Name: The Street Plans Collaborative, Inc.



Tab 3 - General Information

Street Plans has implemented murals since 2021 in Union Square, New York, NY.

GENERAL INFORMATION

Legal Business Name: The Street Plans Collaborative, Inc.
Mailing Address & Phone Number: 6815 SW 57 Terrace, Miami, FL 33143; 305-978-6426
Contact Person: Tony Garcia, Principal & Co-Founder; tony@streetplans.org, 305-978-6426
Location from which the work is to be done: Miami, FL



Asphalt art on a one-way residential street adjacent to a small triangular park in the Clinton Hill neighborhood of Brooklyn, NY.



Tab 4 - Project Approach

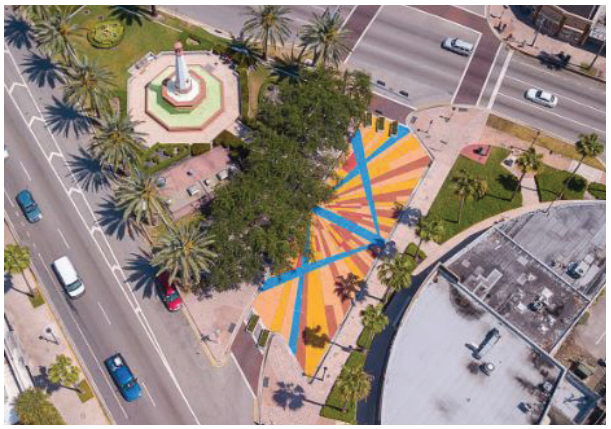
A 6,000 sqft. asphalt art mural entitled "Transformations"in Asheville, North Carolina.

HOW WE'LL WORK WITH YOU

Our team understands the primary purpose of this project is to help integrate art into various public infrastructure projects, specifically focusing on City roadways and associated public spaces. Given our knowledge and technical capacity to help clients develop, design, and physically implement asphalt art projects, we are well-positioned to deliver artscape services that engage the community, beautify corridors, and deliver real safety outcomes. While your request covers a variety of project types, our expertise is in creating asphalt art - projects that seek to convert street space for pedestrians. Our approach, as outlined below, will involve working with you and the community to identify 1 site in the city to implement an asphalt art project. That 'site' may be a series of curb extensions at an intersection, or a series of closely spaced intersections, or a sidewalk expansion area along a block. We will work with you to identify the location and scale of the project, with the understanding that the material budget and our time commitment will largely determine what can be done. Our approach for doing so is included herein.



East Lake Pilot Project, Chattanooga, TN



Rue Vendome Plaza, Miami, FL



Pedestrian Safety Pilot, Beverly Hills, CA

TASK 1: PROJECT MANAGEMENT

Street Plans commits to a process that is delivered on schedule and on budget. Our team will be diligent in working with Opa-locka staff, community partners, and relevant City department/agencies to support or take the lead in efficiently scheduling and coordinating project workflow and deliverables over the life of the project.

To ensure transparent project management, our team will develop and maintain a project management tracking tool that includes a task and invoice schedule, budget status, materials selection, volunteer coordination, etc.

Our team will undertake a full review of relevant past and current projects, data sets, existing policies/legislation, and any plans that impact the future redesign/activation of any projects. Following an existing conditions review the project team will proceed with an "all hands" kick-off call to finalize the project schedules, refine our understanding of your project goals, finalize the project planning/design methodology, and outline roles and responsibilities.

Our team will then communicate consistently with staff (and any other partners) through bi-weekly phone meetings (as needed) and monthly status updates describing the consulting team's progress, budget status, and address any concerns or project challenges on an as needed basis

Task 1 Deliverables

- Project Tracking tool
- Existing conditions review
- Final project schedule and work plan


North King Street Pilot Project, Honolulu,HI

- Bi-weekly coordination calls (at Street Plans' discretion)
- Monthly status updates/invoices
- Formal meeting agendas and minutes

TASK 2: PUBLIC ENGAGEMENT + DESIGN DEVELOPMENT

Street Plans works closely with our clients and their partners to develop culturally and politically competent public engagement strategies. We will look to co-develop an engagement strategy with the Opa-locka staff that leverages existing resources and your organization's relationships and community/agency partnerships.

Our design process for asphalt art projects includes a mutlistep process that starts with a broad community visual preference survey that can help inform the work of the design team in establishing a theme and general preferences (colors, geometric, absitract, etc.). That said, our process includes the following touch points.

1. Visual preference surveys + public votes on the design.
2. The planning and execution of two community design workshops.
3. Door-to-door outreach with mechants (if in a commercial area) before and after project implementation to facilitate input, project awareness, and post-installation feedback from local businesses and community members alike.
4. The painting of the actual asphalt art.

Task 2.1 - Workshop # 1

A key component of the process will be the workshops. Street Plans will host a kick-off workshop to solicit potential Asphalt Art sites







For the Kalihi neighborhood in Honolulu, Street Plans conducted a workshop with a local high school to solicit project ideas. These ideas were then translated into professional designs and painted on the roadway.



"Hotel Life" Curb Extensions, Beverly Hills, Los Angeles, CA

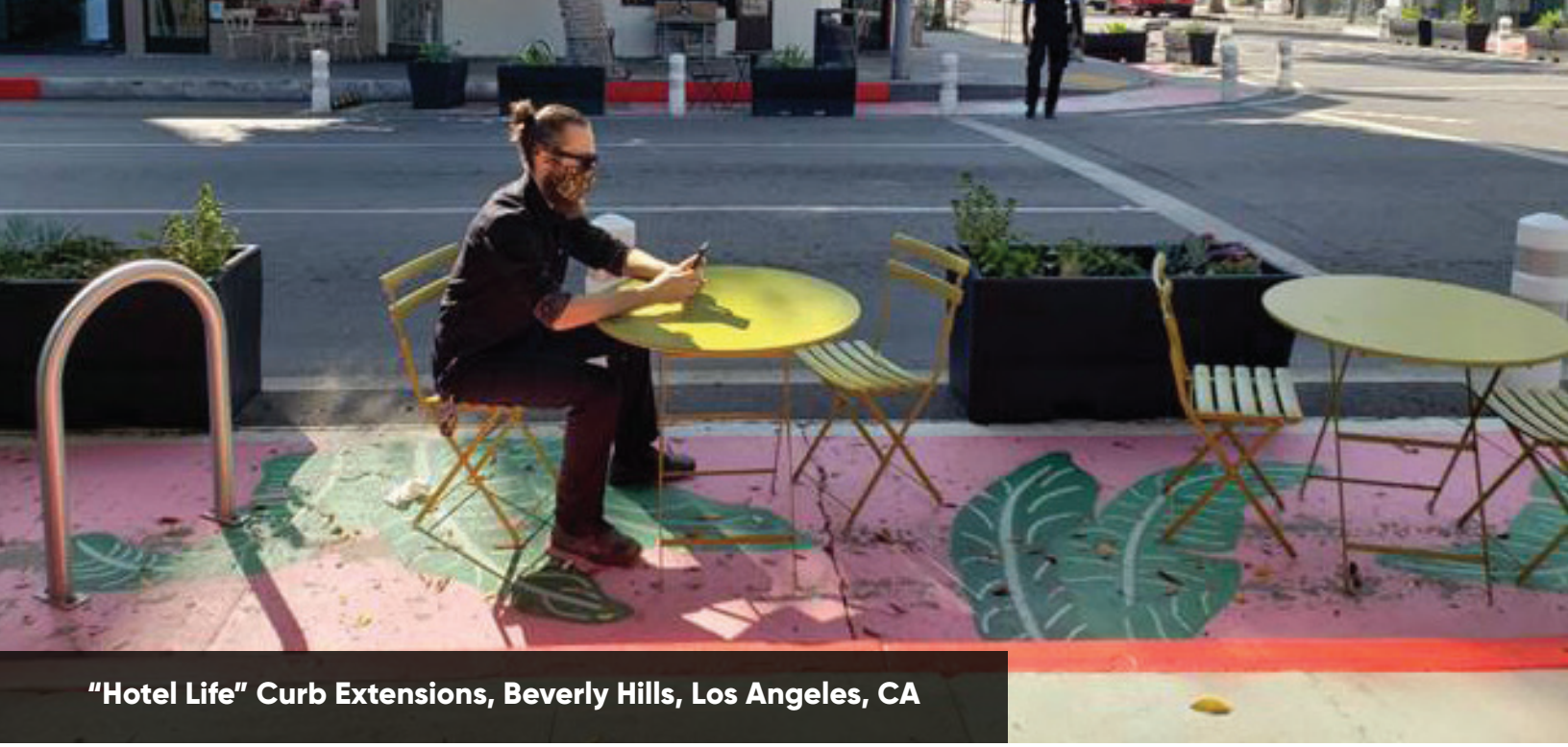
from around Opa-locka. This workshop will be an on-site project planning workshop where we will provide an overview of the approach that help make Asphalt Art projects successful. The workshop will include an interactive planning exercise that will solicit project locations and begin to vet potential project ideas. The workshop effort will target key stakeholders (residents, visitors, elected officials, public transit agencies; local alternative transportation advocacy groups; business owners and other educational, religious, and civic institutions). The workshop will be exploratory in nature and introduce the project, as well as the asphalt art project delivery process. The goal of this task is to educate partners and the public about what asphalt art is and how it works most effectively, and to walk away with potential sites to review. This exercise will also help our project team identify a larger pool of volunteers and allies who can be called on for project implementation, should a project require it. Street Plans will prepare the presentation, maps and any graphic materials needed for the activity. The city will be responsible for advertising, securing a workshop location, and printing any necessary maps or documents.

Task 2.2 - Design Development

Between the first and second round of outreach we'll issue a community-wide survey about potential asphalt art themes. Prior to the second workshop, we will work with you to evaluate and select a project location based on the options we received at the first workshop. We will then combine survey responses regarding themes to come up with three potential designs to be presented at the second public meeting. These designs will factor in materials, installation techniques, and our knowledge of best practices. It may be that a local artist produces a sketch or someone from the public. We will take their initial concepts and translate them into something that can practically be implemented. As previously stated, the site will be determined by two factors: our material budget, which we've identified as $12,500, and our staff time. We typically tell our clients that the scale of the project should be something that Street Plans, city staff and volunteers can accomplish in less than 3 days. That may mean 2-4 curb extensions, or a pedestrian plaza. We will work with you to right size the project. Ultimately, the scale of the project will be set at Street Plans' discretion based on our judgment of staffing and budget.

Task 2.3 - Workshop #2

The second workshop will be used to present up to three draft designs and proposed material selection. Our team will work with staff and project partners to further develop and refine the designs to align with the project budget, intended duration, and City/County requirements. At the second workshop we will have the public vote on the option they like the best. We feel that this approach engenders pride in the artwork and



"Hotel Life" Curb Extensions, Beverly Hills, Los Angeles, CA

will be another point of community participation and excitement. If desired by staff, the design selection can also be done by staff or by the city commission.

Street Plans will develop all workshop outreach and survey materials, which may include, but is not limited to, flyers, posters, and web/social media graphics, as well as messaging templates (press releases, website / blog post, sample Facebook posts, tweets etc.). This will help staff mobilize participation and ideally enlist the interest/support of local partners.

Task 2 Deliverables

- Workshop Plans/Agendas (city to secure venue, print maps and other materials, and advertise about meetings)
- Up to 3 initial designs
- Visual preference/design surveys



Prospect Avenue Pilot Project, Hermosa Beach, CA



TASK 3: PROJECT IMPLEMENTATION

Task 3.1 - Project Implementation Documents

Folllowing the selection of a final design for each project, Street Plans will take the design from pixel to pavement. This work includes developing and implementing a number of overlapping implementation planning documents that typically include the development of a striping, artwork, signage, and traffic control plan; project implementation "run of show;" materials schedule and procurement plan; project staffing and volunteer coordination plan; a project maintenance plan; and a data collection and evaluation plan. Determining the exact project limits and material details will require close coordination with the City of Opa-locka and is expected to be informed by community engagement, approved materials, and intended duration. That said, the goal is to use a material palette that lasts up to a year.

Task 3.2 - Project Implementation

Finally, and perhaps most importantly, Street Plans will lead the project team through the implementation process, including helping to coordinate volunteers. We've learned this activity is not only rewarding for those who participate, but that the act of implementing the work engages passersby as they seek to understand and know more about the project. Such organic forms of engagement are difficult to achieve through structured engagements like workshops and community surveys.

Task 3 Deliverables

- Draft and final site plans
- Draft and final striping, artwork, signage, and traffic control plan
- Implementation run of show
- Materials schedule and procurement plan
- Volunteer coordination plan
- Project maintenance plan



BTactical Complete Streets Asphalt Art & Lane Reduction, Fort Lauderdale, FL

Tab 5 - Experience & Qualifications



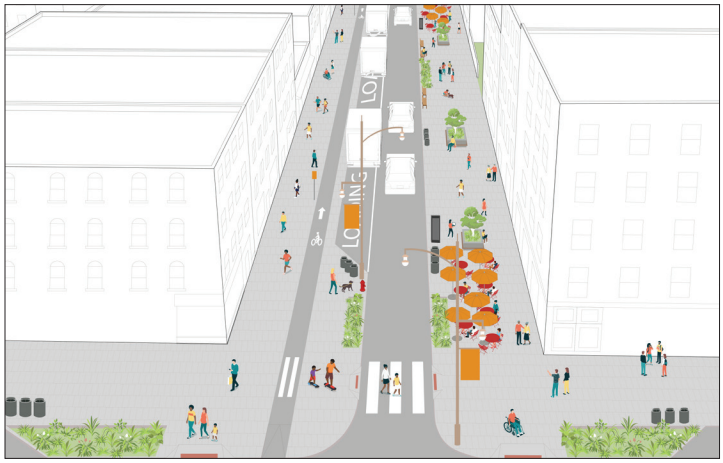
An aerial view of part of over 30,000 sqft. worth of asphalt artpedestrian space in Culver City, California.

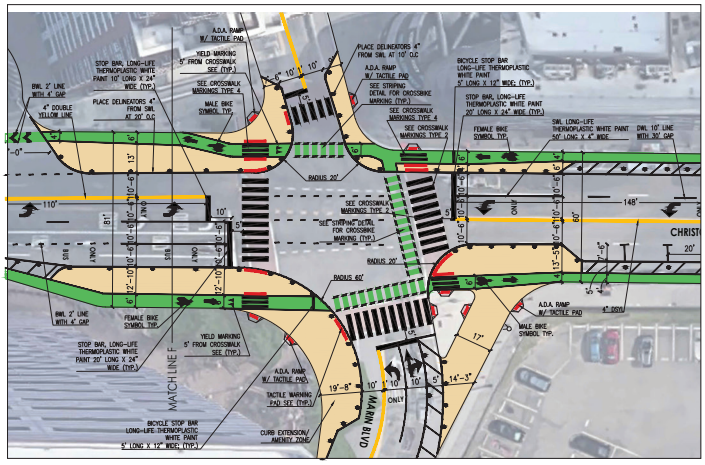
OUR TEAM

Street Plans is an award-winning transportation planning, urban design, and placemaking practice. Founded in 2009, we believe that the economic strength of American cities and towns starts with walkable streets and compact urbanism. Our core expertise is creating active and vibrant streets and public spaces by incorporating art and placemaking into street design, land use, and economic development strategies. We work with local, regional, state, and national governments; not-for-profits; foundations; and private sector companies to develop and deliver meaningful change - quickly. As such, Street Plans is renowned as the leading practitioner and steward of the global Tactical Urbanism methodology. The firm has helped pioneer the development, delivery, and evaluation of what are known as "Quick Build" projects that deliver transformation infrastructre and placemaking projects quickly and inexpensively as a means for helping communities determine what works and what does not before investing limited dollars in long-term transformations.

Street Plans is headquartered in South Miami and maintains offices in the SF Bay Area, New York City, Pittsburgh and Atlanta. Our experience includes a diverse portfolio of urban design, public realm, and active transportation projects across the country, from San Francisco to New York City, as detailed in the pages that follow. We serve as on-call consultants for a dozen cities across the country, including an active contract with the City of Miami Beach Transportation Department.

The firm is led by Anthony Garcia, RA. and Mike Lydon, CNU-A.





URBAN DESIGN, PLANNING, + PLACEMAKING

Our urban design work centers around creating vibrant, compact districts. We design streets and public spaces, and many times test these designs using the Quick-Build methodology. We also help clients think through public space funding, management, and long-term maintenance of public spaces.

- Asphalt Art
- Streetscape Design + Master Plans
- District Public Realm Plans
- Public Space Design + Assessments
- Demonstration, Pilot, + Interim Design Projects
- Placemaking Strategies + Implementation
- Public Space Activation + Programming

TRANSPORTION PLANNING

We have extensive experience in the development of transportation plans that guide public and private sector investment. As a firm focused on moving people and their goods, we help our clients allocate and optimize streetspace for safe and efficent modes of urban transport, prioritizing walking, cycling, public transit, and freight.

- Citywide Transportation Plans
- Bicycle and Pedestrian Master Plans
- Greenway + Trail Plans
- Corridor Design Plans
- Urban Street Design Guidelines
- Technical Street Re-Striping + Signage Plans

STREETPLANS

www.street-plans.com



Anthony Garcia, RA | PRINCIPAL

Tony Garcia, RA is a co-founder of Street Plans and leads the day-to-day operations of the firm. Considered one of the foremost experts in the field of placemaking and street design of his generation, he is a licensed architect and has delivered hundreds of presentations, lectures, and workshops during his 20-year long career. Having completed over 150,000 sf of street murals around the country, he is one of the most prolific asphalt art muralists in the world, is the author of the Asphalt Art guide, and serves as the technical advisor for over 30 cities as part of the Bloomberg Asphalt Art Initiative.

Tony is coauthor of the globally acclaimed series Tactical Urbanism: Short-Term Action, Long-Term Change, co-author of Tactical Urbanism, published by Island Press in March 2015, and together with Mike Lydon is the recipient of the 2017 Seaside Prize. Later in 2018, Tony was awarded the CINTAS Foundation Fellowship for Architecture & Design for contributions to the field of urban design.

Tony is a native Miamian and is regarded as a leading advocate and voice in the development of the city's growing list of renowned public spaces and trails, first as the managing editor of the transportation blog TransitMiami.com, then as Chairman of the largest bicycle pedestrian advocacy organization in South Florida, Green Mobility Network. As part of this effort he co-founded the Ludlam Trail project, which will result in the addition of over 50 acres of new park space in Miami-Dade County, and helped prototype and build support for the creation of Biscayne Green, a one-mile park in downtown Miami currently under design.

Tony is a former part-time faculty member at the University of Miami School of Architecture.

SELECT PROJECTS:

- Move Culver City: Reimagining Mobility in Culver City, CA
- Miami-Dade Transportation Quick-Build Program, Miami, FL
- Biscayne Green Pilot Project, Miami, FL
- WPB Waterfront Activation Strategy, West Palm Beach, FL
- Miami-Dade Vision Zero Plan, Miami, FL
- Miami Beach Bicycle Master Plan, Miami Beach, FL
- Miami Beach Street Design Guide, Miami Beach, FL
- North Beach Master Plan, Miami Beach, FL
- Washington Avenue Bus Platform Analysis, Miami Beach, FL
- Slow Streets Miami Beach Quick-Build Project, Miami Beach, FL
- Village of Pinecrest U.S. 1 Mobility Plan, Pinecrest, FL
- University of Miami Pedestrian Safety Plan, Coral Gables, FL
- Miami 2030 Bicycle Master Plan, Miami, FL
- Crosstown Greenway Pilot Project, Key West, FL
- Btactical Complete Streets Pilot Projects, Fort Lauderdale/Deerfield Beach, FL
- Go Ojai Demonstration Project, Ojai, CA
- Tactical East Avenue Pilot Project, Livermore, CA
- A Safer Prospect Quick Build Project, Hermosa Beach, CA
- Beverly Hills Bicycle and Pedestrian Education & Safety Campaign, Beverly Hills, CA
- Coxe Avenue Corridor Pilot Project, Asheville, NC
- Westminster 2030 Bicycle Master Plan, Westminster, CO

EDUCATION

- University of Miami School of Architecture, Master of Architecture

- New York University, B.A. Architecture & Urban Design

RECENT AWARDS

- 2019 IDA Award, Coxe Ave

- 2018 Charter Award, Biscayne Green

- 2017 Cintas Fellowship

- 2017 Seaside Prize

- 2016 FLASLA, Biscayne Green

- 2015 Charter Award, North Beach Master Plan

LICENSES & AFFILIATIONS

- State of Florida Licensed Architect, AR97799

LANGUAGE

English | Spanish

EXPERIENCE

20 years

STREETPLANS



Amalia Tomey | PROJECT DESIGNER | SOUTH FLORIDA

With a strong background in urban, architectural and interior design, Amalia brings ten years of experience in leveraging her skills to meet the needs of any project. Prior to Street Plans, she worked on the Integral Revitalization and Historic Preservation of Old Havana for the City of Havana's Department of Architectural Design and Urban Planning, transforming the city into a pedestrian and bicycle-friendly hub revived with public and commercial spaces.

Amalia is the recipient of the AIA Miami Design Award Student Design/Honor (FIU) for her Climate Resilient Urban Nexus CHoices (CRUNCH) Research Project award to recognize a student who has achieved outstanding academic distinction in the study of architecture. Amalia holds a Bachelor's Degree in Industrial Design and a Masters in Architecture from Florida International University.

SELECT PROJECTS:

- Move Culver City: Reimagining Mobility in Culver City, CA
- Slow Streets Miami Beach Quick-Build Project, Miami Beach, FL
- Btactical Complete Streets Pilot Projects, Fort Lauderdale/Deerfield Beach, FL
- Crosstown Greenway Pilot Project, Key West, FL
- Court Avenue Street Re-Design, Memphis, TN
- Let's Ride JC Bicycle Master Plan + Bikeway Design Guide, Jersey City, NJ

EDUCATION

- Master of Architecture. FIU

- Bachelor of Science in Industrial Design, Higher Institute of Design, Havana, Cuba

LANGUAGE

English | Spanish

EXPERIENCE

10 years



Catalina Ruiz Luzio | PROJECT DESIGNER

Catalina Ruiz Luzio is Street Plans' Project Designer with a background in architecture, urbanism, and digital representation. She is based out of our Miami HQ office.

Prior to Street Plans, Catalina worked at Cure & Penabad and contributed to a variety of projects including industrial design, multifamily housing and Leon Krier's New Urbanism masterplan for Cayala City, Guatemala.

While obtaining her degree, she lived and studied in Italy, Colombia, Cuba and Mexico. The opportunity to live, learn and design within communities of all sizes instilled in her the importance of community-based design and sense of place.

Most recently, she was serving as Junior Project Manager in Northwest Arkansas and involved in placemaking and community outreach projects including a a collaboration with Thaden school for a pedestrian pilot project in Bentonville, AR.

SELECT PROJECTS:

- Park to Park 103 Asphalt Art, New York NY
- W. 111th St Building Blocks, New York NY
- Senoia Illustrative Master Plan and Unified Development Ordinance, Senoia, GA
- Eagle Park, Bristol VT
- Salem Turnpike, Roanoke VA
- Arch Street Project (CRCOG), New Britain CT
- Fisherman's Wharf Promenade, San Francisco CA

EDUCATION

- Bachelor of Architecture, University of Miami, 2017

LANGUAGES

English | Spanish

EXPERIENCE

5 years

STREETPLANS



Cassiopea McDonald | PROJECT MANAGER

Cassiopea brings a wealth of experience in community co-design processes, emphasizing the transformative potential of the built environment to enhance occupants' physiological and emotional well-being. Her design ethos prioritizes community resiliency, spatial equity, and a healing-centered approach.

With over a decade of architectural design, programming, and project management expertise, she joined the Street Plans team after honing her skills at Jensen Architects and ENVELOPE architecture + design in the San Francisco Bay Area. During her tenure, she spearheaded numerous community co-design initiatives in diverse neighborhoods, collaborating closely with city officials, community groups, and non-profit organizations. Additionally, she served as the Program Director for PROXY, orchestrating large-scale events in partnership with community stakeholders.

Cassiopea holds a Bachelor of Architecture from the California College of the Arts and a Community Health Worker Certificate from the Community College of San Francisco, underscoring her multidisciplinary approach to fostering healthier, more inclusive built environments.

EDUCATION

- California College of the Arts, Bachelors of Architecture, 2013
- City College of San Francisco, Community Health Worker Certifcate, 2021

EXPERIENCE

10 years

SELECT PROJECTS:

- WPB Waterfront Activation Strategy, West Palm Beach, FL
- Little Embarcadero Activation Project, San Francisco, CA
- Cleveland North Coast Waterfront Activation, Cleveland, OH
- Hazelwood Local @ Hazelwood Green, Pittsburgh, PA
- Hazelwood Riverside Bar, Pittsburgh, PA
- SF Port FWCBD Little Embarcadero, San Francisco, CA
- SF MTC Artists + Trails, San Francisco, CA

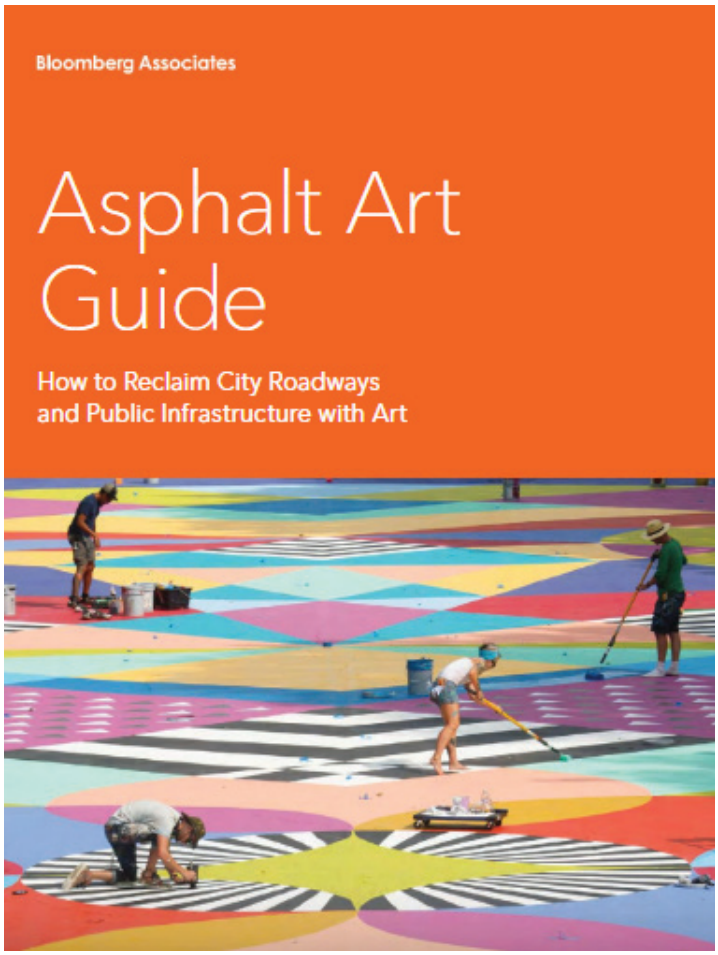
STREETPLANS

Asphalt Art Leaders

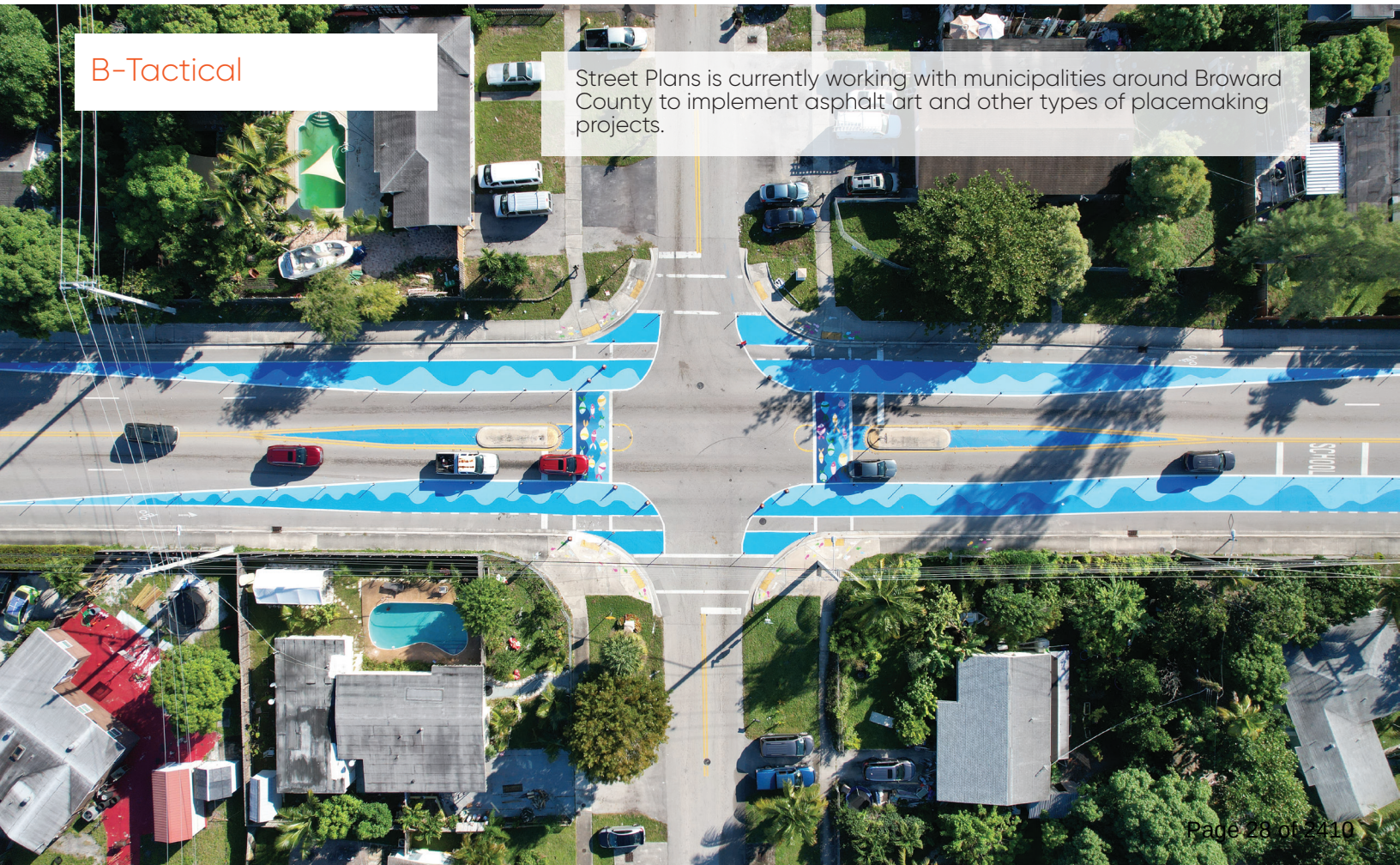
Street Plans is widely acknowledged as the global expert in asphal art. We developed the methodology that is most commonly used, and have worked with dozens of cities and clients around the world to implement projects, from London to Honolulu.

Street Plans has a longstanding partnership with Bloomberg Philanthropies as part of their Asphalt Art grant program. We are the authors of the Asphalt Art guide, and are ongoing technical advisors for the asphalt art grant program, currently servicing over 40 cities around the globe.

Included in the pages that follow is a sample of some of the work of the firm. In some cases we are the primary and sole artist, while in others we work collaboratively with artists or community members to develop a shared vision. In all cases, we lead on the execution of the mural and the translation of the art from paper to pavement!



Asphalt Art Guide (2019)

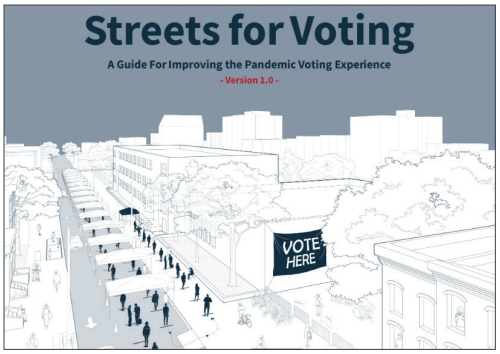


SELECT AWARDS + PUBLICATIONS

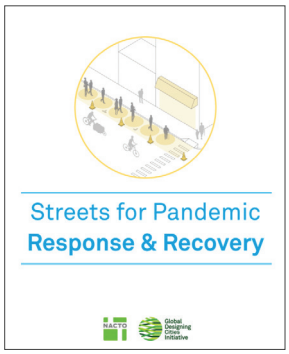
Awards

- 2019 International Downtown Association Award of Excellence, Coxe Avenue Redesign
- 2019 APA Award, Avenue 3 Miami
- 2019 APA Award, GoHuman Tactical Urbanism Demonstration Projects
- 2018 Charter Award, Biscayne Green
- 2017 Cintas Award
- 2017 Seaside Prize
- 2016 FLASLA, Biscayne Green
- 2015 Charter Award, North Beach Plan
- 2015 Charter Award, Plan El Paso
- 2015 Charter Award, Code SMTX
- 2014 Charter Award, Jean Lafitte
- 2014 Charter Award, Hamilton

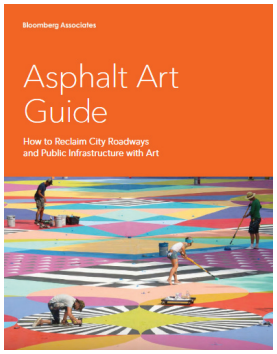
Publications



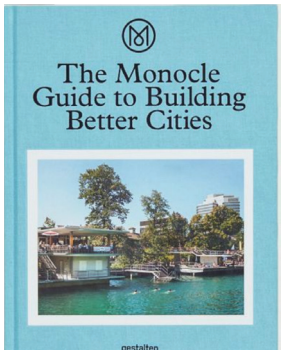
Streets for Voting (2020



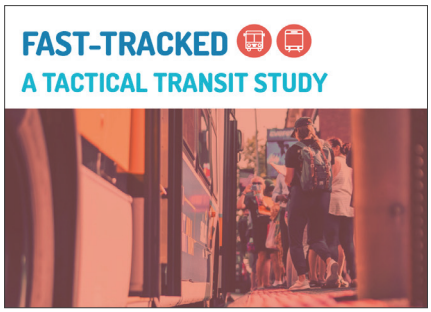
Streets for Pandemic Response & Recovery (2020)



Asphalt Art Guide (2019)



The Monocle Guide to Building Better Cities (2018)



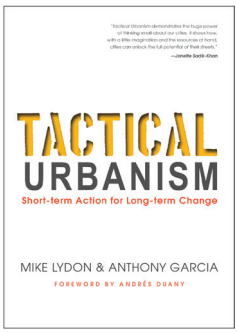
Fast-Tracked: A Tactical Transit Study (2019)



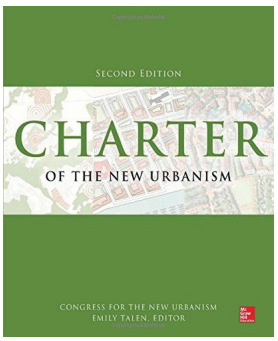
Tactical Urbanist's Guide to Materials and Design (2016)



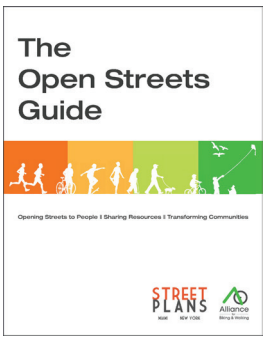
Public Space Stewardship Guide (2016)



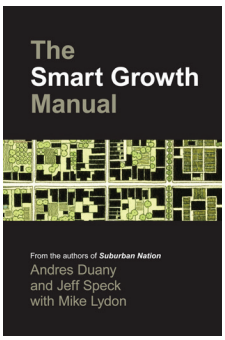
Tactical Urbanism (2015)



Charter of the New Urbanism, Second Edition (2013)



The Open Streets Guide (2012)



The Smart Growth Manual (2009)

"SCENES FROM BALLONA CREEK" CULVER CITY, CA

Client: City of Culver City

Summary:
Street Plans was hired by the City of Culver City Transportation Department to develop and implement a mural called "Scenes from Ballona Creek." Street Plans was the lead artist on the design.

As part of this effort Street Plans led a design process for over 30,000 sf worth of asphalt art pedestrian space. Taken together these form one of the largest asphalt murals in North America.

The process involved doing a series of designs for the community to comment and vote on before arriving at the final design. Once the design was chosen, Street Plans created detailed design drawings to guide implementation.

The final design depicts a transect of species that live along the Ballona Creek wetland that passes through Culver City.



With more than 30,000 sq. ft. of murals representing the flora and fauna of the nearby Ballona Wetlands, this is one of the largest asphalt art installations in North America.

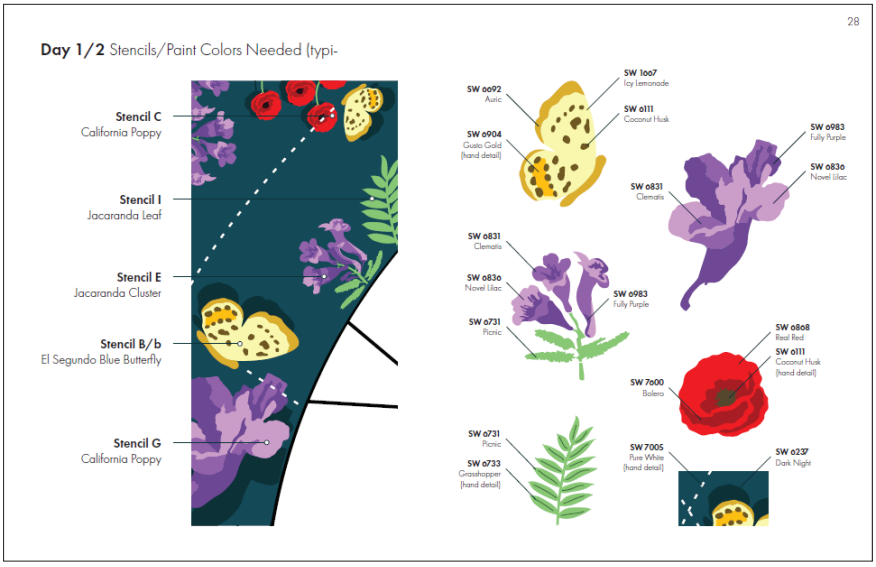


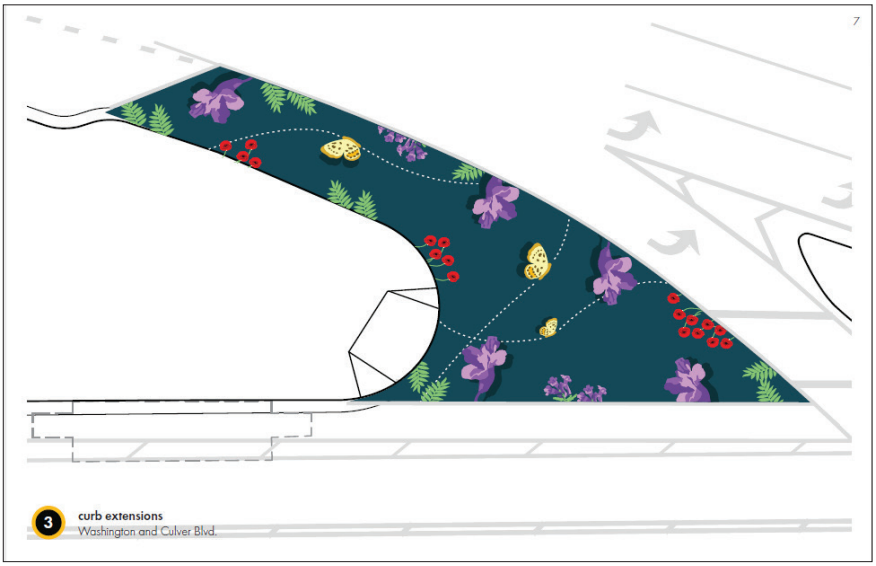

PAY AT
PAY STATION
NO
PARKING
2
HOUR



MOVE CULVER CITY

ASPHALT ART IMPLEMENTATION PLAN





For all of our projects, we produce implementation documents like the pages shown above to help guide mural execution.


AKASHA
WISE SONS

MIAMI-DADE TRANSPORTATION QUICK-BUILD PROGRAM MIAMI, FL

Client: Miami-Dade County's Department of Transportation and Public Works



Summary:
The Miami-Dade Transportation Quick-Build Program was developed as a collaboration between Street Plans, Green Mobility Network, and the Miami-Dade County Department of Transportation and Public Works (DTPW). The goal of the programs was to make it easy for citizens to make meaningful improvements to their neighborhoods.

The Program started as a county-wide open competition for transportation pilot projects. Street Plans created the marketing and outreach materials for the program, including the logo and overall brand identity. Workshops were held once a month for six months across the county to teach the quick-build method, encourage attendees to apply, and brainstorm application ideas. In July, a selection committee comprised of Street Plans, the DTPW, Miami-Dade County Dept. of Parks, Recreation, and Open Spaces, Green Mobility Network, and TransitCenter selected 18 (out of 68) applications based on criteria like geographic diversity, feasibility of installation, proximity to transit, matching funds, connection to adjacent community assets, etc. The selected projects included separated bus lanes, separated bike lanes, bus stop improvements, traffic calming measures, and wayfinding.



The program kicked off with Plaza 98, a pavement to plaza project in Miami Shores Village that transformed half of a block into a temporary plaza that continues to be used for periodic community events (photo on following page).

Another asphalt art project that resulted from this effort was called Avenue Three (photos to the right). Here the goal was to convert parking spaces along NE 3 Avenue in downtown into usable pedestrian spaces. These were then programmed by local restaurants and businesses.



The Plaza 98 "FlexiStreet" in Miami Shores Village is now the location of community events held every second Friday of the month. This project was very similar to what you can expect in Opa-locka. It was accomplished over 3 days and cost around $15,000. As you can see above, the project included painting the travel lanes and adjacent parking. When not used for events, the travel lanes are opened and the street functions as it does normally.



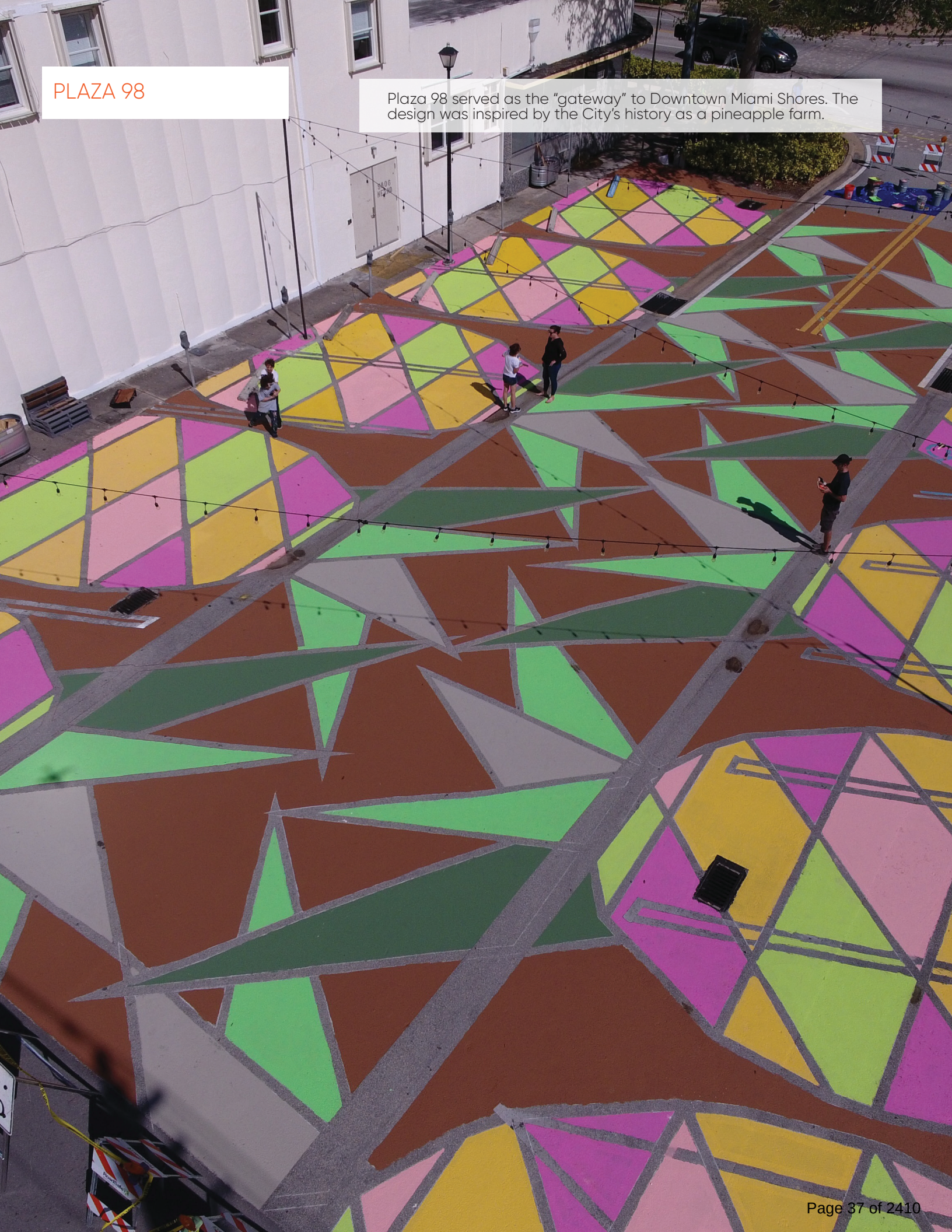


TASTE OF AVENUE 3

Taste of Avenue 3 built on nonprofit Avenue 3 Miami's aspirations for a streetscape master plan for the two-block street. Street Plans assisted the nonprofit in forming this vision.

PLAZA 98

Plaza 98 served as the "gateway" to Downtown Miami Shores. The design was inspired by the City's history as a pineapple farm.





BISCAYNE GREEN MIAMI, FL

Client: Miami Downtown Development Authority (DDA)

Summary:

Street Plans was hired by the MIami DDA to design and build a prototype of what has become known as Biscayne Green along Biscayne Boulevard. For three weeks, Biscayne Green re-purposed 101 parking spaces (two parking medians) as new public spaces, testing design ideas to inform the long-term redesign of Biscayne Boulevard.

As part of the project, Street Plans designed all elements of the public spaces and the surrounding streets. Two travel lanes were transformed into a dedicated bus/bike lane and on-street parallel parking, and the surrounding crosswalks were also enhanced with pavement art, the first art crosswalks implemented on Florida Department of Transportation roads in Miami-Dade County!

Both parking islands were programmed throughout the three weeks, starting with 16 planned events, and eventually reaching over 30 spontaneously organized activities. One parking median included a turf open lawn, a dog park, a children's playground, and seating area.

The second median featured painted asphalt art, hanging lights, park furniture food trucks, and was used primarily for vendors, music, and dance. Over the course of the three weeks, Biscayne Green was visited by over 20,000 people who participated in the events, and who brought their families and pets to enjoy the project's more passive amenities.

Street Plans built every aspect of the project, from the lighting, to the site furniture, and managed every element of the programming, procurement, outreach and permitting of the project.


A must see!
SHEN YUN
JAN 6-8
Adrienne Arsht Center
ShenYun.com/FL
877-988-Show


Are you a Brickelista?



"RUE VENDOME PLAZA" MIAMI BEACH, FL

Client: City of Miami Beach

Summary:
Street Plans was hired by the City of Miami Beach to develop a design and implement Rue Vendome Plaza. Previously identified in the North Beach Master Plan, Rue Vendome Plaza was a 9-space parking lot adjacent to a prominent neighborhood gathering space. The master plan put forward a vision for an interim transformation of the parking lot into a plaza (1-2 years), one that would eventually be permanently implemented.

Street Plans produced three alternative designs for the space, and worked with the community to choose a preferred design. The 3,565 square-foot design that was ultimately chosen was inspired by the art deco windows of adjacent buildings around Normandy Isle.

Street Plans was joined by City of Miami Beach volunteers to paint the plaza, guided by the implementation drawings produced by Street Plans. The plaza was completed on April 6th, and has been used by the city for farmer's markets and smaller neighborhood events since its installation.

The plaza has since been reconstructed as a permanant gathering space for the North Beach neighborhood.



The plaza was painted within two days by Street Plans and 10 volunteers.

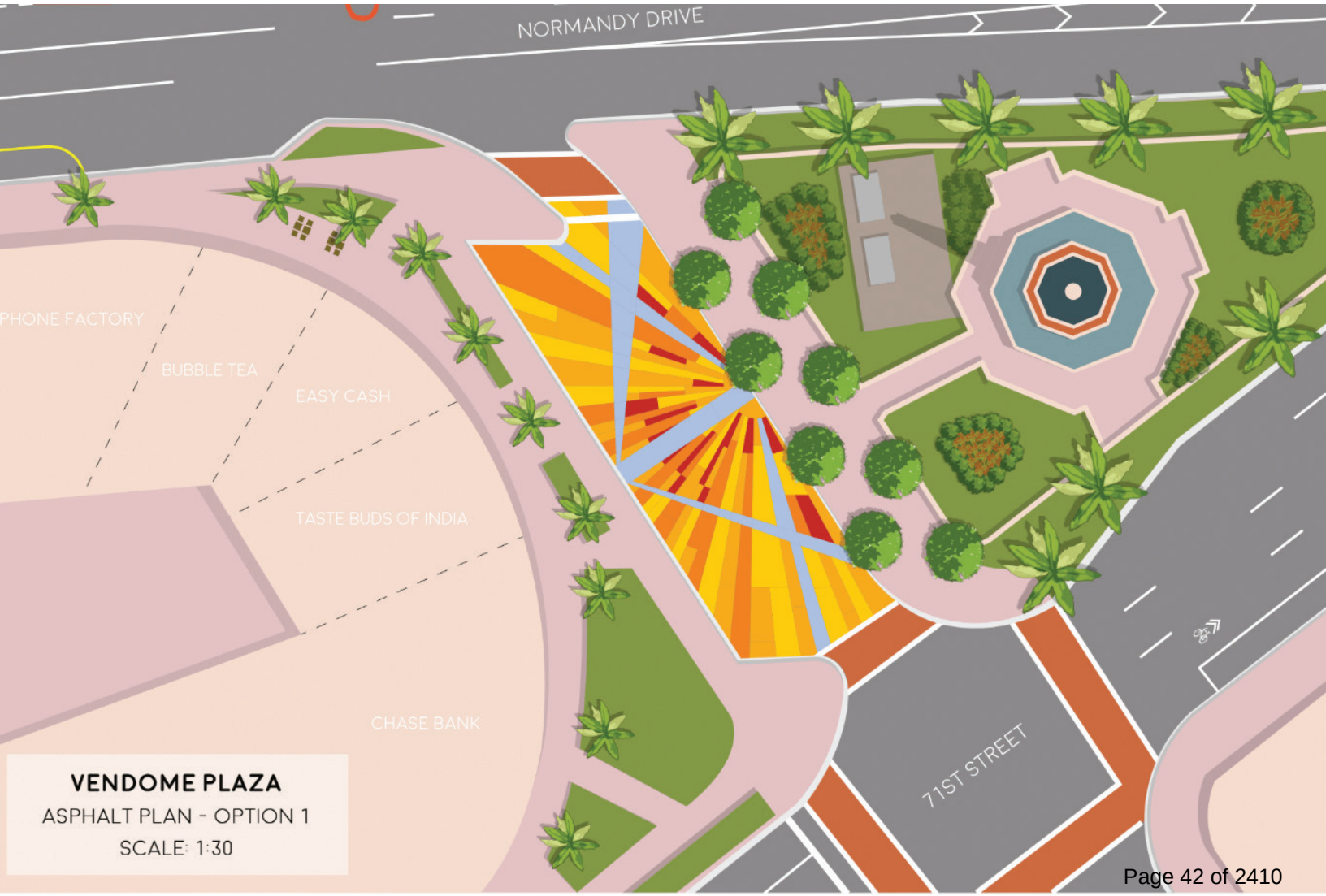




In April 2018, the City of Miami Beach and partners Prism Creative Group hosted a "Motown Brunch" at Rue Vendome Plaza.

Rue Vendome

For all of our projects, the designs start as beutiful drawings that are then translated into a mural. Working with paint and pavement marking manufacturers to approximate colors is part of the work.



VENDOME PLAZA
ASPHALT PLAN - OPTION 1
SCALE: 1:30

UNION SQUARE ASPHALT ART PROJECT

Client:
Union Square Partnership

Summary:
NYC DOT implemented the 14th Street Busway project in October 2019 as a new transit and truck priority upgrade for 14th Street, and as a street design prototype for the city-at-large. The center of the busway crosses the heart of Union Square, where sidewalk extensions were installed to make additional space for walking. These new pedestrian areas are situated in a highly visible confluence of foot traffic and transit access, and they were identified as a key opportunity for Asphalt Art.

For the past three years, Union Square Partnership has hired Street Plans to be a technical implementation partner to help implement Asphalt Art along the 14th street busway. In this role, Street Plans works alongside selected artists to plan, permit, and implement asphalt art each year. Specifically, Street Plans produces site and barrier plans, procures materials and directs materials staging, and leads volunteers alongside the selected artist to implement the art.

In 2021, Street Plans assisted with the first asphalt art mural installed along the Busway, called Collective Vision by GERALUZ + WERC.

In 2022, a new, 8,000 square foot mural called Ripples of Peace + Calm by Ji-yong Kim was installed over the course of five days in May, with Street Plans leading implementation. Over 125 community volunteers assisted in the creation of this massive public art piece.

These murals help activate the pedestrian areas on 14th Street, presenting a remarkable opportunity to support, enhance, and celebrate the new pedestrian-focused infrastructure while communicating an important message and beautifying the neighborhood.



NOMAD PIAZZA NEW YORK, NY

Client(s): Flatiron NoMad Partnership

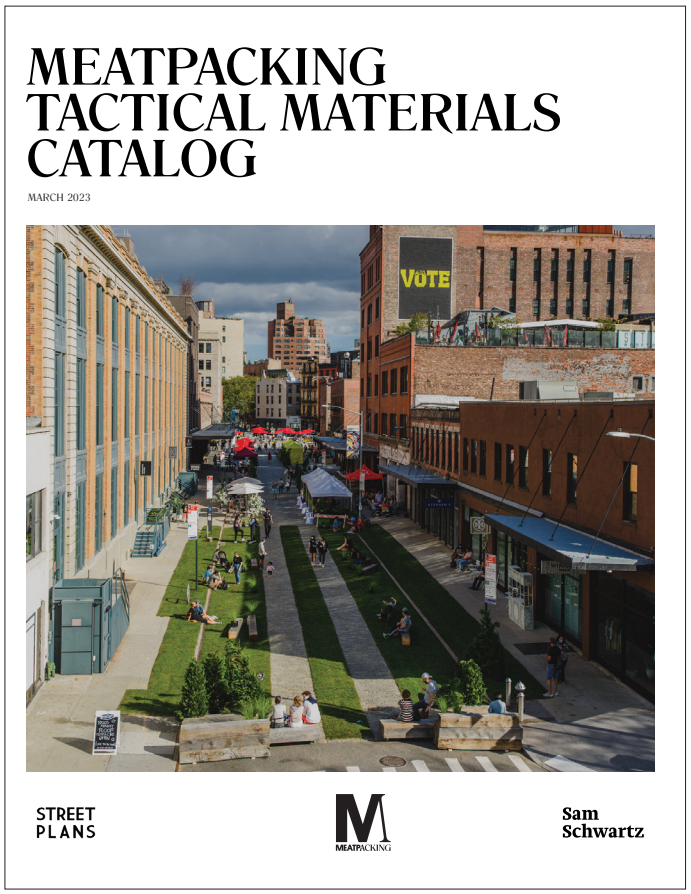
Summary:
Under the City's emergency Open Streets and Open Restaurants program, the Flatiron NoMad Partnership developed the NoMad Piazza project to assist local businesses during the Covid-19 pandemic.

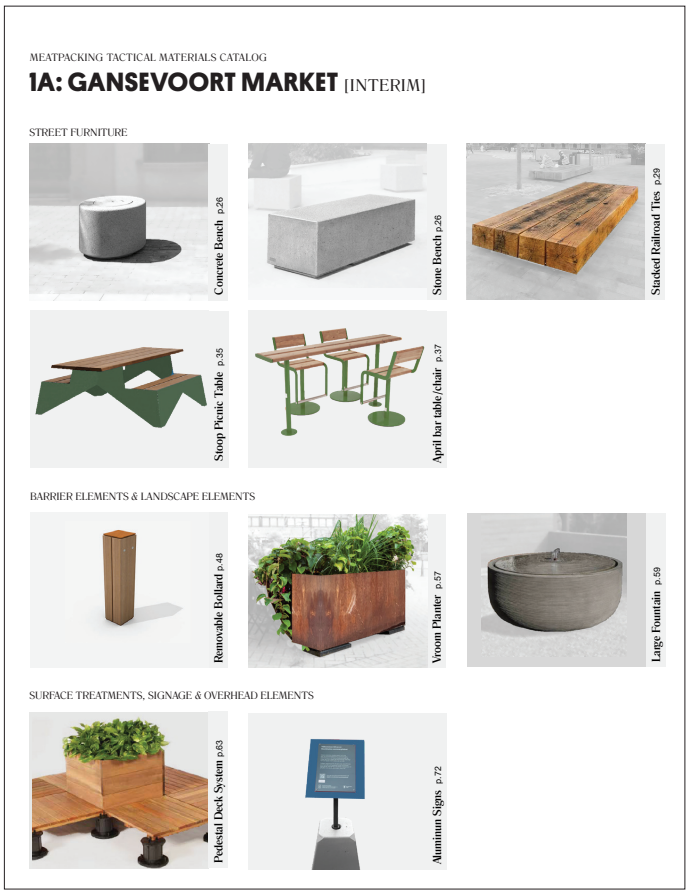
Street Plans was hired to design and implement an asphalt art "seasonal street" transformation. Located along Broadway, between 25th and 27th Streets, the two block, car-free plaza allowed multiple restaurants to use the street for outdoor dining. Street Plans led the design, material selection, and oversaw implementation of the project. The asphalt art pattern was inspired by a detail found on the nearby Flatiron Building.

With the City making Open Streets and Dining permanent, the two block plaza is on its way to being permanently upgraded.



RIZZOLI





MEATPACKING DISTRICT TACTICAL ON-CALL SERVICES

Client: Meatpacking Business Improvement District

Summary:
Street Plans, supported by Sam Schwartz Engineering, is the lead on-call urban design firm for advancing the Meatpacking BID's Tactical Urbanism public space transformation initiatives.

To date, Street Plans has worked closely with BID staff to develop a detailed temporary to permanent materials library that specifies the types, quality, and materiality of various streetscape materials to be integrated into the District's public spaces - lasting from one-week pilots to multi-year interim street redesigns. To tie the different materials together, our team developed various material collections, each with their own 'looks' that key in materials with intended project durations.

Recently, Street Plans led the installation of Gansevoort Landing, which includes a new asphalt art mural designed by Alake Shilling, curated by the Whitney Museum, on 10th Avenue and Gansevoort Street. For the mural, Street Plans produced the materials plan and budget; detailed installation plans; and led the physical installation using a combination of stencil and free-hand techniques. The new plaza, which connects to the new 5-acre Gansevoort Peninsula park, is the realization of one of the priority projects identified in the District's Western Gateway Public Realm Vision Plan.

Street Plans is currently applying the Tactical Materials Catalog to redesign the District's main east-west corridor: West 14th Street.

This fall the Street Plans worked closely with NYC DOT, Meatpacking District, and The Whitney Museum to implement Gansevoort Landing plaza. Materials were selected from the Tactical Materials Catalog.





NOTE: Concept plan not yet available for public review

"HOTEL LIFE" BEVERLY HILLS, CA

Clientt: City of Beverly Hills

Summary:
Street Plans led the design and implementation of a mural in Beverly Hills on the streets around Rodeo Drive called "Hotel Life". The project focused on advancing the City's goal to enhance safety, walkability, and encourage the use of active modes, while paying homage to the famous wallpaper of the Beverly Hills hotel.

The project team engaged residents, stakeholders, community partners, and visitors through a series of online surveys, and met with owners within the immediate vicinity of the project area to discuss the project. Street Plans also hosted two interdepartmental charrettes to discuss design concepts, material durability, and seek guidance about the implementation.

Several design options were considered for the street mural, each inspired by a different aspect of Beverly Hills' architectural history. The street mural pattern selected by the Traffic and Parking Commission is an homage to the iconic wallpaper found in the Beverly Hills Hotel that depicts banana leaf fronds against a pink background.

The final design included 4 curb extensions at the Camden Drive/Brighton Way intersection with delineators and planter boxes to provide greater separation between people and moving vehicles. Bike racks were also placed on the northeast and southeast curb extensions, making this project a more bike-friendly destination.

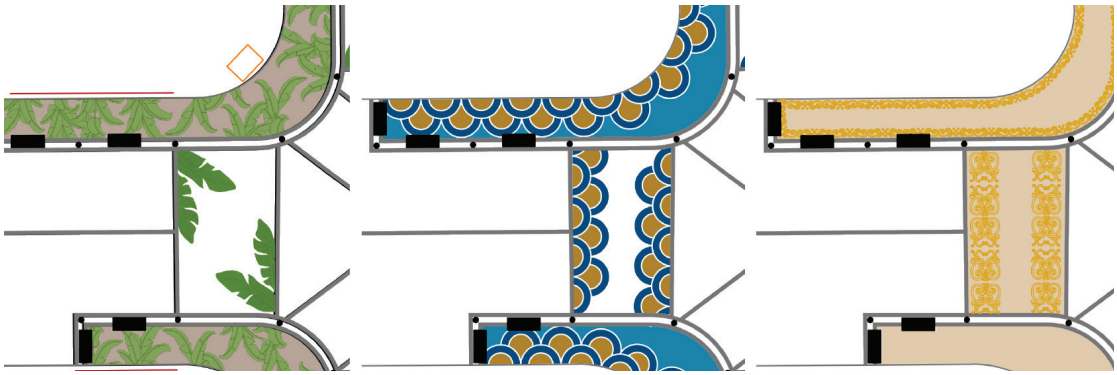


Installation

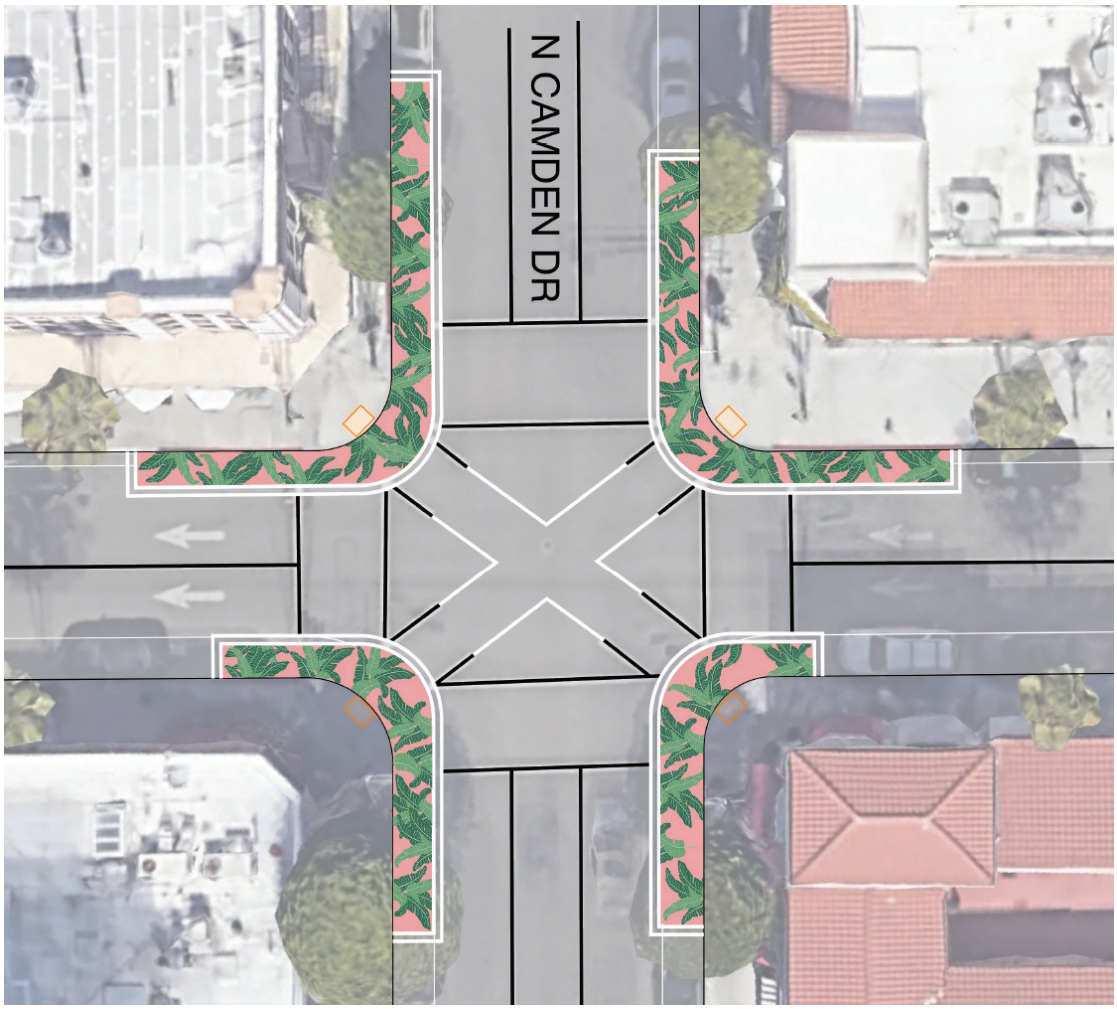


Design





Several design options were considered for the street mural, each inspired by a different aspect of Beverly Hills' architectural history and surrounding buildings.



The demonstration was installed on November 5th, 2020. The Beverly Hills Public Works team was a key partner in implementation. Leading up to the installation, the consultant team and Public Works team met regularly to coordinate materials ordering and delivery, traffic control, and installation plans. Prior to the street mural installation, city staff striped the white lines delineating the curb extensions, making street mural paint application easier.

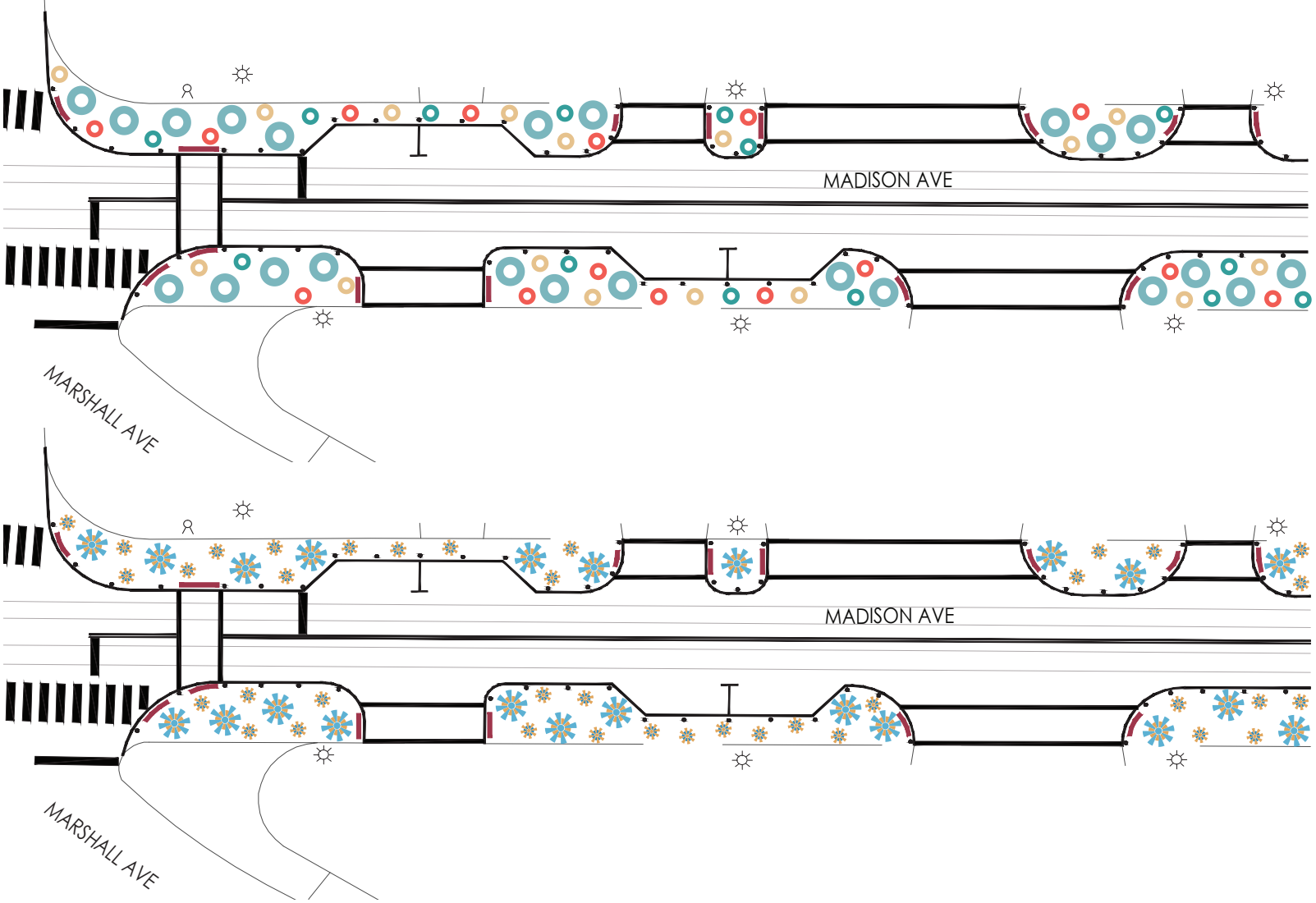


Leaves **D + E**

Leaves D + E + **C**

Leaves D + E + C + **A + B**

Street Plans developed an installation guide with step-by-step instructions for stencil and paint applications.



MADISON AVENUE REDESIGN MEMPHIS, TN

Client(s): Downtown Memphis Commission, Memphis Medical District Collaborative

Summary:

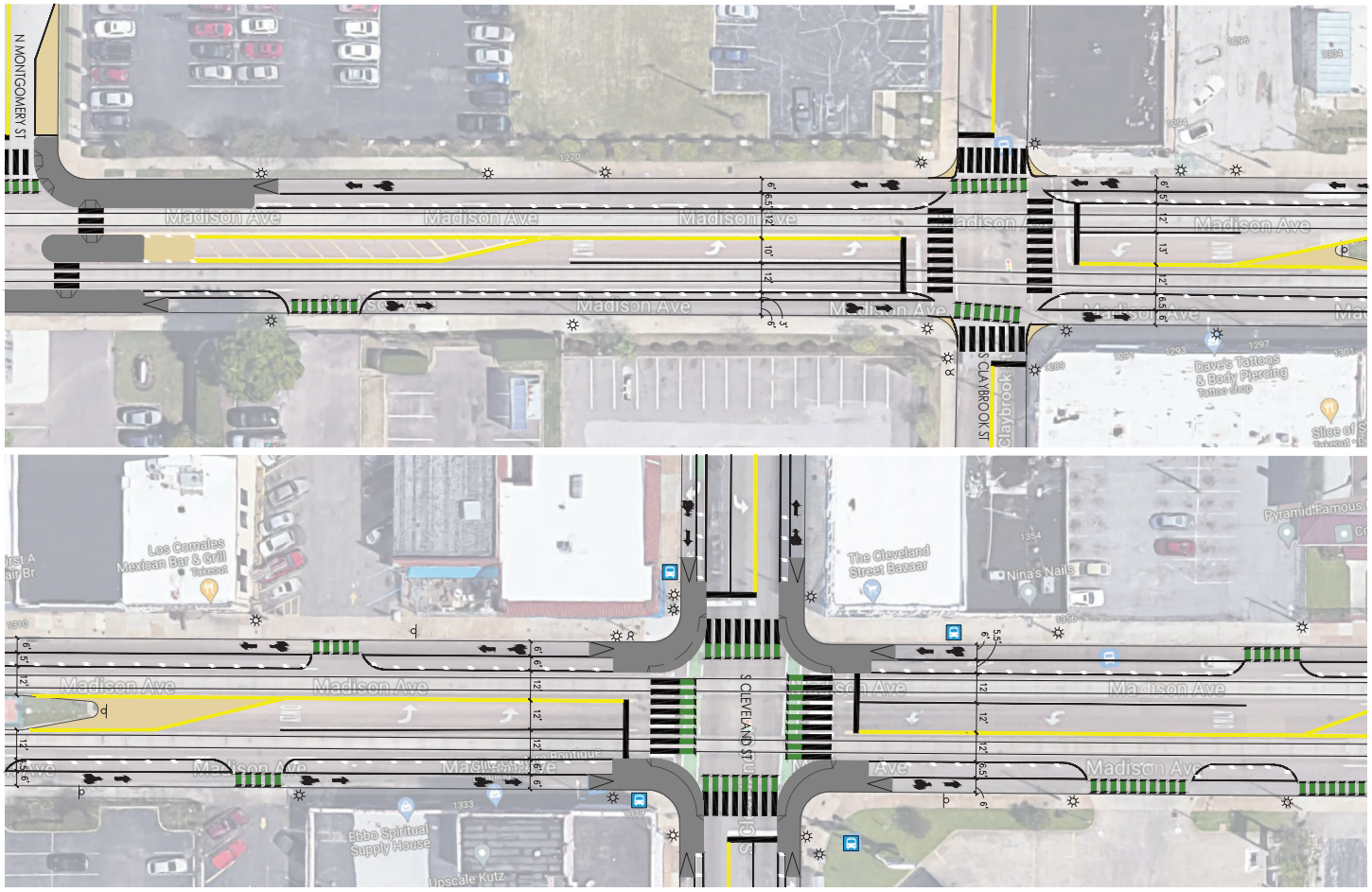
Street Plans engaged by Downtown Memphis Commission and Memphis Medical District Collaborative to design and implement a multi-phase corridor redesign of Madison Avenue. The 2.3-mile corridor links the Mississippi Riverfront, Downtown Memphis, and a wide range of medical, institutional, and higher education anchors.

Plans for the redesign were produced following public and stakeholder outreach, as well as close coordination with the City of Memphis Engineering Department.

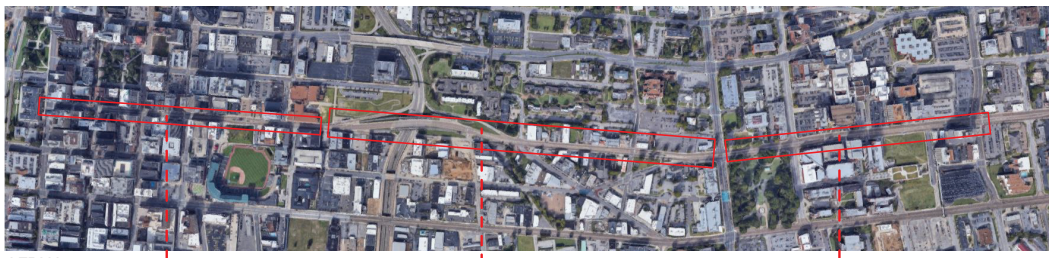
Central to the design was the return of historic streetcar line operations in 2023. Excessive space beyond existing vehicular demand was repurposed for sidewalk and curb extensions, bicycle infrastructure, and other improvements.

Specific elements of the design include lane reductions, curb extensions, protected bike lanes with protected intersection, mid-block crossings, and linear painted sidewalks where ADA accessibility is currently not accommodated.

Street Plans is responsible for developing 100% geometric design, striping, signage, and asphalt art plans, as well as Quick Build materials selection so that an interim design can be installed before permanent improvements are made (see above image).



MADISON AVE. CURB EXTENSION DESIGN DEVELOPMENT



AERIAL

SEGMENT 1

SEGMENT 2

SEGMENT 3

COLOR PALETTE OPTION 1

COLOR PALETTE OPTION 2

SEGMENT 1
(N Front St. - Danny Thomas Overpass)
-Downtown area.

SEGMENT 2
(Danny Thomas Overpass - S Manassas St.
-Overpass area and before medical district.

SEGMENT 3
(S Manassas St. - S Pauline St.)
-Medical district area.

OR

WAYFINDING

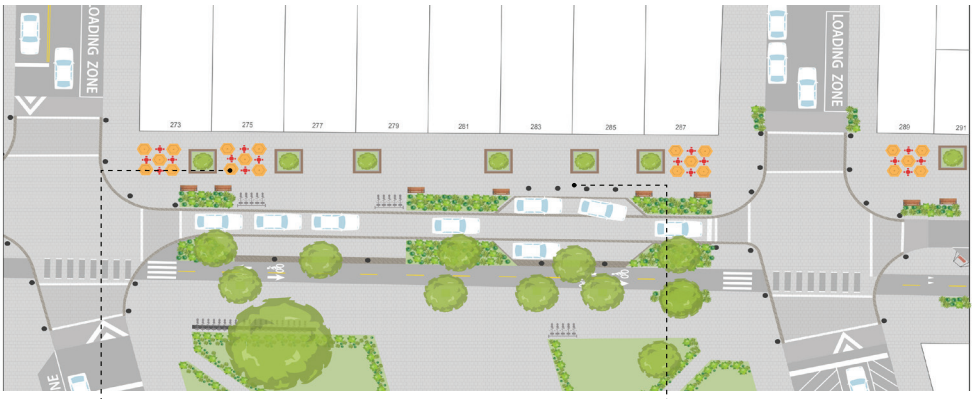


GROVE STREET PUBLIC REALM PLAN

Client: City of Jersey City, Department of Infrastructure

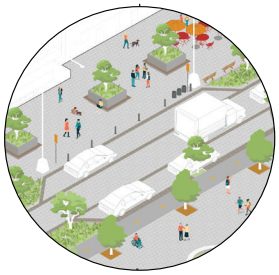
Summary:
As a part of Street Plans' ongoing work with the City of Jersey City, the team was engaged to produce a conceptual plan to transition the COVID-response Grove Street linear plaza, between 2nd and York Streets, into both an interim and permanently reconstructed public space. To understand the challenges and opportunities along the corridor, Street Plans first facilitated in-depth stakeholder outreach. BikeJC, residents, school administrators, business owners, etc. were gathered for feedback to inform the transformation. The final deliverables included axonometric views of two of the eight blocks (from Montgomery Street to Mercer Street in front of City Hall; and of Bay Street), and plan view conceptual drawings of all eight blocks of a permanent transformation. Street Plans created interim and permanent versions. In front of City Hall, temporary elements like asphalt art, planters, and outdoor dining facilities delineate a future, permanent sidewalk extension. Also included in the interim versions are elements like intersection murals, street vendors, and movable tables and chairs. Bike lanes are protected by parking and delineators. In the future corridor plan, the bike lanes become sidewalk-level, large tree planters surrounded by seating are indicated on the newly extended sidewalk, curb extensions increase pedestrian visibility at intersections, and bioswales offer green infrastructure solutions. All visualizations were included in a presentation deck to the City of Jersey City and stakeholders. Each block's plan view drawing included call-outs highighting key elements of the streetscape plan. The City of Jersey City is planning to implement the capital version of this plan in 2024.

Permanent Redesign
Montgomery Street - Mercer Street

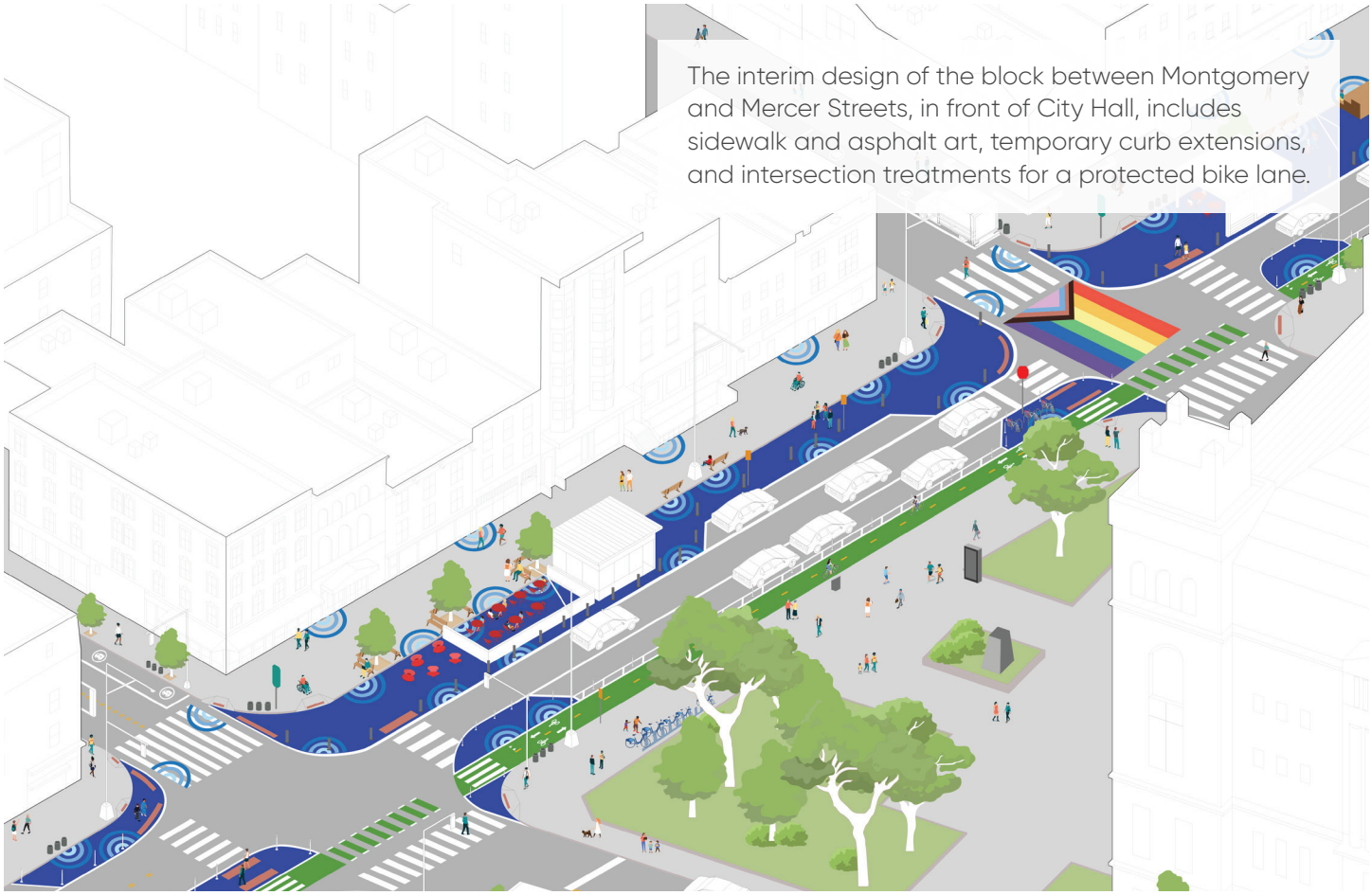




Flexible outdoor seating for restaurants would be complemented by fixed benches, raised tree planters, and rain gardens.



The curbless street treatment includes different colored pavers, textures, and vertical elements like trees, bike racks, and bollards, to define space.



The interim design of the block between Montgomery and Mercer Streets, in front of City Hall, includes sidewalk and asphalt art, temporary curb extensions, and intersection treatments for a protected bike lane.

GROUNDED PLACEMAKING STRATEGY DOCUMENT

Client: Wexford Science + Technology

Summary:

In January 2018, Street Plans and partner Graffito SP (retail leasing firm based in Boston, MA) were hired by Wexford Science + Technology to create placemaking plans for six cities of the company's "knowledge communities" across the country: Baltimore, Chicago, Miami, Philadelphia, Providence, and St. Louis. Street Plans and Graffito SP evaluated each district for its potential retail, placemaking, and programming opportunities, as well as committed to deeper dives into each community to produce an actionable menu of projects that could be implemented within a year following the completion of the first phase of work. With a heightened focus on a local approach to each site, and armed with a toolbox of creative retail and placemaking strategies, Street Plans and Graffito SP ensured that the final deliverable would reflect principles of good urban design and community engagement. The consultant team took two site visits to each city, and met with Wexford's partners, local organizations, entities already executing programming at or surrounding the sites, and established connections with potential new partners that could be brought on in a second phase of work to execute the projects proposed by the consultant team. The final document was a body of work with six individual chapters, one for each community, that included a set of five projects to address the mobility, connectivity, and placemaking challenges discovered in each. The document laid out a path to execution leading Wexford to bring the consultant team on for a second phase of work. In August 2023, Street Plans implemented one of the priority projects identified for Philadelphia.



Street Plans collaborated with a group of resident artists adjacent to the uCity Square (Philadelphia) site to produce the asphalt art design, and installed the project in August 2023.

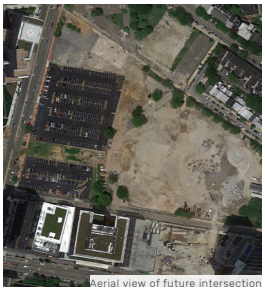
2

CUTHBERT AND 37TH ST INTERSECTION MURAL

PROJECT DESCRIPTION

This project will create an asphalt mural at the future intersection of 37th and Cuthbert Streets, in the center of the site and adjacent to the UCD Phase 2 project location. Installed as a community event, this art will create energy around the future, central public space within uCity Square, and preview this as the central hub of activity for the development.

The design would bring a vibrant pop of color and design to the center of uCity Square, increasing its legibility from the edges and drawing people in from all sides. It is also recommended that the design is repeated at the "mouths" of 37th St at Lancaster Ave and Market St to establish a visual language that will be recognized from both corridors. This edge art can be the same colors, but more temporary in nature, and meant to fade as the development moves forward.



Aerial view of future intersection

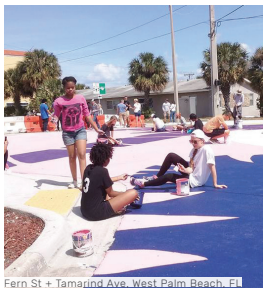


Fern St + Tamarind Ave, West Palm Beach, FL





Future Cuthbert St, looking east

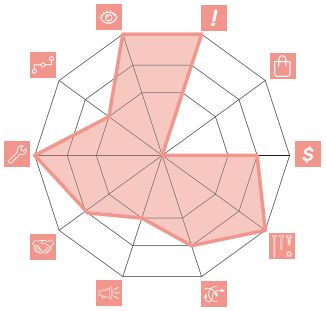


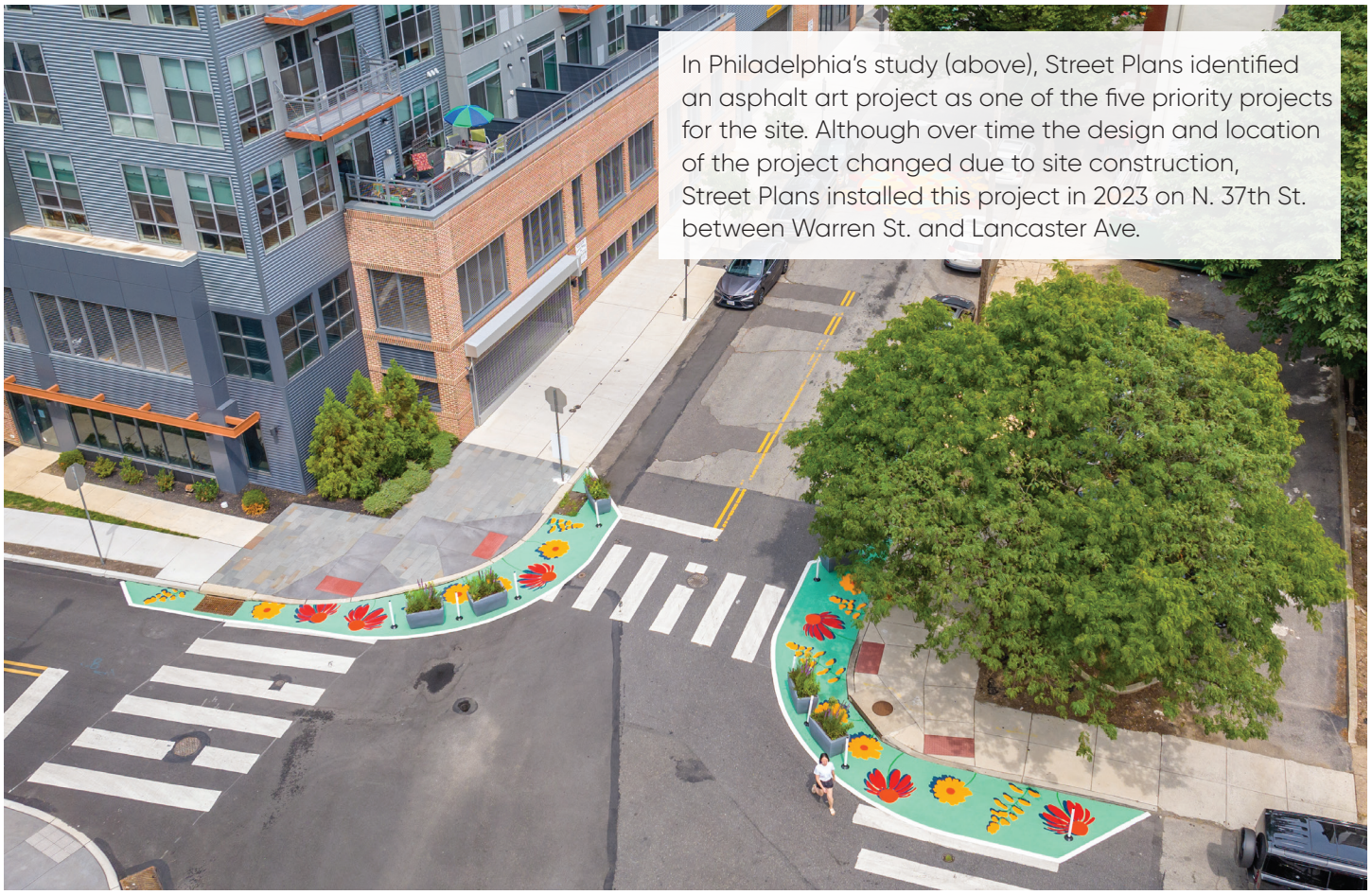
Fern St + Tamarind Ave, West Palm Beach, FL

It is recommended that the intersection design and colors be coordinated with the rest of the art treatments included in the Project Menu.

CRITERIA APPLICATION

This project is strongest in visibility and materials. It would create a very recognizable identity in the center of the site, and build on the energy the UCD Phase 2 site will attract. It could also be installed by volunteers, or members of the community. There are also multiple options for partnership engagement. Mural Arts could continue their work from Market St, or Street Plans could lead the execution of the intersection mural. The mural would require city permitting, slightly increasing its complexity of installation. However, the city is familiar with requests for interventions in the street at uCity Square and along Market St, as UCD has engaged them previously.





In Philadelphia's study (above), Street Plans identified an asphalt art project as one of the five priority projects for the site. Although over time the design and location of the project changed due to site construction, Street Plans installed this project in 2023 on N. 37th St. between Warren St. and Lancaster Ave.

"TRANSFORMATIONS" ASHEVILLE, NC

Client: Asheville on Bikes and The Blue Ridge Bicycle Club

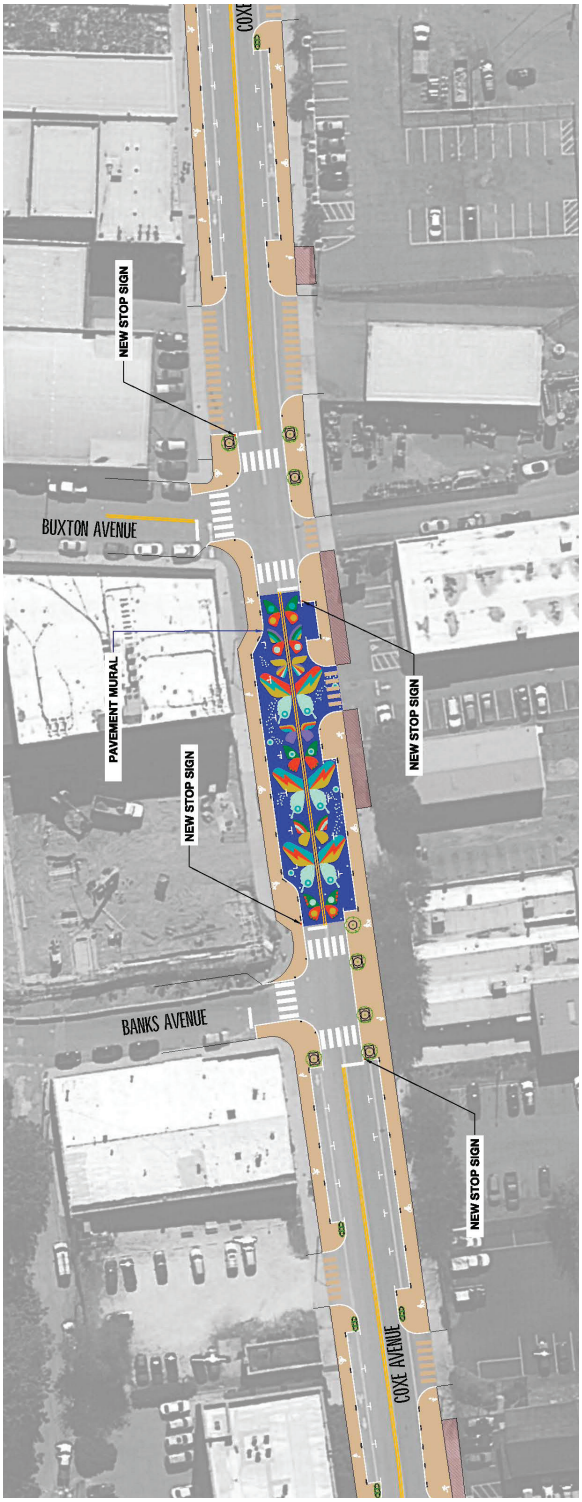
Summary:
Street Plans was hired by Asheville on Bikes and The Blue Ridge Bicycle Club, and worked closely with the City of Asheville to "right-size" Cox Avenue, an overly-wide six block, 0.4-mile mixed-use corridor on the downtown edge. The pilot project was slated to last 12 months and was positioned to inform the design of a capital reconstruction project slated for implementation in 2022.

As part of this effort Street Plans implemented a 6,000 sf asphalt art mural called "Transformations" on the middle block. Street Plans co-designed the project with a local artist. In this case, the artist did a rough sketch of an idea, which we then used to create the design that was implemented. The design was inspired by the idea that the street was transforming in much the same way that a caterpillar becomes a butterfly.

Street Plans developed the draft and final project implementation plans for the various aspects of the installation, and assisted the client with the permitting process as well as the development of a traffic management and a de-installation or project adjustment plan. For the installation, the team focused on making public spaces more accessible, safe, and functional for all users.

The project took five days to implement and leveraged the involvement of more than 130 volunteers, as well as several city staff members. Six new crosswalks, a .4-mile parking and barrier-protected "micro-mobility lane." One year after installation, data collected showed that average vehicle speed dropped 28%; and vehicles exceeding the speed limit dropped from 66% overall to 20%, while vehicular traffic volumes remained consistent.







Using large-format stencils (over 20 separate pieces), Street Plans and volunteers laid out the designed in collaboration with local artist Jenny Fares. The 6,000 square foot mural took 1.5 days to lay out and paint.



The asphalt design sits in the middle of the entire .3-mile corridor, slowing traffic and adding art to an area of Coxe Avenue with emerging residential and small business development.

KALIHI INTERSECTION REPAIR HONOLULU, HI

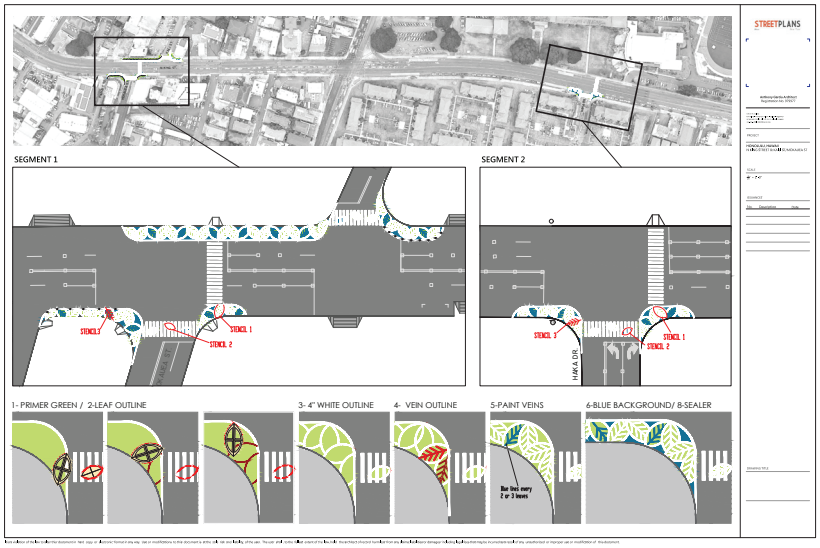
Cllient: Hawaii Department of Health

Summary:
The Hawaii Department of Health hired Street Plans to design and implement asphalt art at intersections around Farrington High School.

The project began with a series of workshops with students, where Street Plans worked with City staff and Honolulu community members to develop a pilot tactical urbanism project in one of the city's most diverse and underserved communities. Street Plans engaged engineering students from Farrington High School to choose a project location and develop a design for six painted curb extensions along the corridor. The students mapped out the routes that they typically take to school and selected three intersections along N. King Street, a busy commercial corridor in the neighborhood. Students helped to develop a wide range of design ideas that Street Plans then translated into a final design.

Street Plans developed a project implementation plan for the various aspects of the installation, and assisted the client with the permitting process as well as the development of a traffic management plan. The designed bulb outs narrowed the road and resulted in a decrease of vehicle turning speeds at the intersections. The new design will stay in place for a year while city officials test the proposed road changes. These efforts also helped further the city's Complete Streets policy goals to make the city safer for pedestrians, bike riders, and passengers using public transportation.

The Kalihi pilot project will hopefully lead the way to develop Honolulu's first Quick-Build Program that will allow the City to test and implement other community-led projects.




Street Plans conducted public workshops to plan the quick build project in the Kalihi neighborhood.






Street Plans worked closely with Farrington High School students who developed the curb extension design motif over a two-day workshop.


ONE TECH
WIRELESS


Before


After


Before
PAWN
LEASE
ONE TECH
OPEN


After
LEASE
ONE TECH
OPEN


ONE TECH
WIRELESS
CITY AND COUNTY OF

BTACTICAL COMPLETE STREETS PILOT PROJECT DEERFIELD BEACH, FL

Client: Broward Metropolitan Planning Organization

Summary:
In 2021, Street Plans was engaged by the Broward Metropolitan Planning Organization to lead the first two phases of its BTactical Tactical Urbanism program within its Complete Streets division.

The first project selected was in Deerfield Beach, CA for a corridor included in the city's high injury network. Within the pilot project segment, a .6-mile stretch of NE 3rd Avenue adjacent to Broward Health North hospital and two schools, there had been three traffic crash fatalities in the last five years, due to excessive speeding and unsafe driving. Within the last ten years, the roadway had been widened from two to four lanes, and the city wanted to use the pilot project in part to test a 4-3 lane reduction. Street Plans kicked off the project with a Walk & Talk workshop to survey the project extents with the community, and start to brainstorm traffic calming and other solutions that could be evaluated through the pilot project.

Over the course of the public engagement, Street Plans and the project team refined the final pilot project design to reflect the feedback of stakeholders and residents within the Tedder neighborhood, and the desires of the city. From December 7-11, 2021, Street Plans, the BMPO, the City of Deerfield Beach, and over 70 volunteers executed a lane reduction by restriping the travel lanes and creating a painted bike lane buffer; added three new crosswalks and eight total art crosswalks; and added vertical protection to the existing bike lanes. Within the first four months of evaluation, bicycle and pedestrian activity substantially increased.

As of 2023, the Quick-Build project remains, and the permanent design for the corridor is at 90%.



BTACTICAL LAKE RIDGE FORT LAUDERDALE, FL

Client: Broward Metropolitan Planning Organization

Summary:
In 2021 the Broward Metropolitan Planning Organization (BMPO) created the BTactical Program as part of their Complete Streets Initiative. The program provides funding and technical assistance to municipalities in the region wishing to advance street enhancement projects using the Quick Build approach. Street Plans was engaged by the BMPO to lead the first two phases of the BTactical Program.

The second project selected was in the Lake Ridge Neighborhood of Fort Lauderdale on NE 15th Avenue between Sunrise Blvd and NE 13th Street. The corridor experiences speeding issues and overlaps with the Broward High Injury Network (HIN). It is also characterized by having a lack of pedestrian and bicycle amenities, and a high concentration of traffic collisions in the past five years. This location is also listed as a priority project in the Lake Ridge Neighborhood Mobility Master Plan adopted in 2015 (NMM), which proposes a lane elimination project on the corridor.

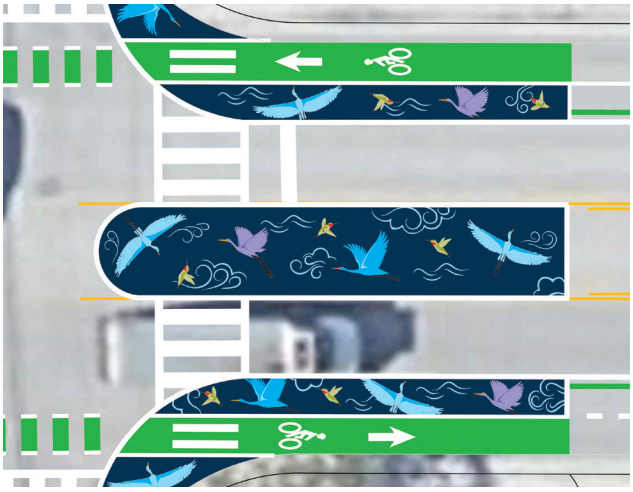
The team hosted a series of in-person and virtual workshops, as well as door-to-door outreach efforts, that invited community members to share the challenges they experience along the corridor as everyday users and provide feedback on the proposed street design. Street Plans also facilitated weekly focus group meetings with local stakeholders and partners.

Street Plans and the project team refined the final pilot project design to reflect the feedback of stakeholders and residents within the Lake Ridge neighborhood, and the needs of the city. Street Plans also came up with an asphalt art designs inspired on the local fauna and created a step-by-step implementation guide for the project.

From May 12-15, 2022, Street Plans, the BMPO, the City of Fort Lauderdale, and over 100 volunteers executed a lane reduction by restriping the travel lanes and creating a 5 foot bike lane with a 5 foot buffer area; added nine new crosswalks, two pedestrian refuge islands, and over 60,000 square feet of asphalt art.

Within the first month of evaluation, the number of speeding vehicles on the corridor reduced by over 50%. The daily average speed on the corridor reduced from 40 mph to 35 mph. This pilot project installation allowed the City of Fort Lauderdale to deliver safety and accessibility benefits to the Lake Ridge Neighborhood without having to wait years for capital project funding approval.







Above: Residents participating at Walk and Talk Workshop. Middle: Asphalt Art Mural designed by Street Plans. Bottom: Lake Ridge Resident utilizing new bicycle infrastructure.



Tab 6 - Schedule & Budget

Asphalt art integrated into a crosswalk in Miami, FL.

PROJECT SCHEDULE & BUDGET

PROJECT SCHEDULE

#	TASKS/SUBTASKS	12/24	01/25	02/25	03/25	04/25	05/25
1	**Project Management**						
1.1	*Project Management*						
2	**Public Engagement & Design Development**						
2	*Public Engagement*						
2.1	*Workshop 1 — Site Identification*						
2.2	*Design Development*						
2.3	*Workshop 2 — Presentation of Designs*						
3	**Project Implementation**						
3.1	*Project Implementation Documents*						
3.2	*Project Implementation*						

We anticipate the project taking approximately 6 months to complete, from NTP to final implementation.

PROJECT BUDGET

		Street Plans				
Task	**Cost Categories**	**Tony Garcia, Principal**	**Cassiopea McDonald, Project Manager**	**Tomey/Ruiz Project Designer**	**Total Hours**	**Total Fees**
	Loaded Rates	**$300**	**$184**	**$131**		
1.1	***Project Management***	12	12	0	24	$ 5,808
2.1	***Public Engagement - Workshop 1***	4	12	6	22	$ 4,194
2.2	***Design Development***	6	20	44	70	$ 11,244
2.3	***Public Engagement - Workshop 2***	4	12	6	22	$ 4,194
3.1	***Project Implementation Documents***	12	46	10	68	$ 13,450
3.2	***Project Implementation***	12	28	18	58	$ 11,110
	Total	50	130	84	264	$ 50,000
	Total Labor Costs	$ 15,000	$ 23,996	$ 11,004		$ 50,000
	Other Direct Costs (ODC)					$ 12,500
	Grand Total Fees					$ 62,500

Direct costs will include paint, stencils and other materials necessary for painting.

Tab 7 - References



An 8,000 square foot mural called Ripples of Peace + Calm by Ji-yong Kim installed in Union Square in New York, NY.

REFERENCES

Client: City of Fort Lauderdale
Summary: In 2021 the Broward Metropolitan Planning Organization (BMPO) created BTactical as part of their Complete Streets Initiative. The program provides funding and technical assistance to municipalities in the region wishing to advance street enhancement projects using the Quick Build approach. Street Plans was engaged by the BMPO to lead the first two phases of program.
Contact: Karen Warfel
Phone: 954-828-3798
Email: kwarfel@fortlauderdale.gov



Client: Miami-Dade County Department of Transportation and Public Works
Summary: The Miami-Dade Transportation Quick-Build Program comprised 18 projects including pavement to plaza street redesigns, asphalt art, separated bus and bike lanes, bus stop improvements, traffic calming measures, and wayfinding, aimed at building local support for long-term improvements to Miami's auto-centric public realm.
Contact: Carlos Cruz-Casas, Chief Innovation Officer
Phone: 786-442-5248
Email: Carlos.Cruz-Casas@miamidade.gov



Client: Broward Metropolitan Planning Organization
Summary: Street Plans, the BMPO, the City of Deerfield Beach, and over 70 volunteers executed a lane reduction on a corridor included in the city's high injury network by restriping the travel lanes and creating a painted bike lane buffer; added three new crosswalks and eight total art crosswalks; and added vertical protection to the existing bike lanes. Within the first four months of evaluation, bicycle and pedestrian activity substantially increased.
Contact: Kerrie MacNeil, Planning and Programming
Phone: 954-876-0072
Email: MacNeilk@browardmpo.org





Tab 8 - Additional Forms

An asphalt art curb extension, part of the CITY WALK pedestrian/bike system in Providence, RI.

PROPOSER QUALIFICATIONS

1. Legal Name and Address:

   Name: Anthony Garcia

   Address: 6815 SW 57 Ter

   City, State, Zip: Miami, FL 33143 Phone/Fax: 305.978.6426

2. Check One: Corporation (✓) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: 03/22/2010 State in which Incorporated: Florida

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization: _____

5. The length of time in business: 14 years

6. The length of time (continuous) in business as a service organization in Florida:
   14 years

7. Provide a list of at least three references that the Proposer has supplied services meeting the requirements of this RFP during the last twenty-four months.

   1. Karen Warfel, Division Manager, Transportation Planning, City of Fort Lauderdale, FL; kwarfel@fortlauderdale.gov; 954-828-3798

   2. Carlos Cruz-Casas, Chief Innovation Officer, Miami-Dade County Department of Transportation and Public Works; Carlos.Cruz-Casas@miamidade.gov; 786-442-5248

   3. Kerrie MacNeil, Planning & Programming, Broward MPO; MacNeilk@browardmpo.org; 954-876-0072

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

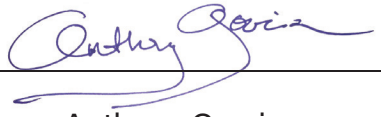
B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature 

Printed Name Anthony Garcia

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He is the Co-owner
(Owner, Partner, Officer, Representative or Agent) of
The Street Plans Collaborative, Inc. the Proposer that has submitted the attached proposal.

(2) He is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

April Samide
Witness

By: Anthony Garcia
Signature

Mike Lydon
Witness

Anthony Garcia, Principal
Print Name and Title



NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By: Anthony Garcia

Title: Principal

Sworn and subscribed before this

7 day of D 2024

Notary Public, State of Florida

DEBORA C ANDRADES

(Printed Name)

My commission expires: 7-17-26

NOTARY PUBLIC
DEBORA C. ANDRADES
Notary Public, State of Florida
Commission# HH 270823
My comm. expires July 17, 2026

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

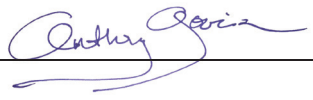
Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: The Street Plans Collaborative, Inc.

Authorized Signature: 

Print Name: Anthony Garcia

Title: Principal

Date: 09/16/24

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and
The Street Plans Collaborative, Inc. or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: Principal

Sworn and subscribed before me this

7 day of 10, 2024

_____
Notary Public
State of Florida at Large

My commission expires: 7-17-26

NOTARY PUBLIC
DEBORA C. ANDRADES
Notary Public, State of Florida
Commission# HH 270823
My comm. expires July 17, 2026

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/02/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATIONIS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER BUCKNER COMPANY OF CO LLC/PHS 34340783 The Hartford Business Service Center 3600 Wiseman Blvd San Antonio, TX 78251	**CONTACT NAME:** **PHONE (A/C, No, Ext):** (866) 467-8730 **FAX (A/C, No):** (888) 443-6112 E-MAIL ADDRESS:
INSURED The Street Plans Collaborative 6815 SW 57TH TER MIAMI FL 33143	**INSURER(S) AFFORDING COVERAGE** — **NAIC#** **INSURER A :** Hartford Underwriters Insurance Company — 30104 **INSURER B :** **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED.NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/Y YY)	LIMITS	
A	COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [ ] OCCUR [X] [X] General Liability GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [ ] PRO-JECT [X] LOC [ ] OTHER:			34 SBM AG2DGA	07/12/2024	07/12/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$1,000,000 $1,000,000 $10,000 $1,000,000 $2,000,000 $2,000,000
A	**AUTOMOBILE LIABILITY** ANY AUTO ALL OWNED AUTOS [ ] SCHEDULED AUTOS [X] HIRED AUTOS [X] NON-OWNED AUTOS			34 SBM AG2DGA	07/12/2024	07/12/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$1,000,000
A	[X] **UMBRELLA LIAB** [X] OCCUR **EXCESS LIAB** [ ] CLAIMS-MADE DED [ ] RETENTION $ 10,000			34 SBM AG2DGA	07/12/2024	07/12/2025	EACH OCCURRENCE AGGREGATE	$2,000,000 $2,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** Y/N [ ] If yes, describe under DESCRIPTION OF OPERATIONS below	N/ A					PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE -EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	
A	Employment Practices Liability Insurance			34 SBM AG2DGA	07/12/2024	07/12/2025	Each Claim Limit Annual Aggregate Limit	$25,000 $25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES **(ACORD 101, Additional Remarks Schedule, may be attached if more space is required)**

The Business Liability Coverage Part includes a Blanket Additional Insured By Contract Endorsement, Form SL 30 32.

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Susan L. Castaneda

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Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See ***Specific Instructions*** on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

The Street Plans Collaborative, Inc.

2 Business name/disregarded entity name, if different from above.

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☐ C corporation ☑ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

5 Address (number, street, and apt. or suite no.). See instructions.

6815 SW 57 Terrace

6 City, state, and ZIP code

Miami, FL 33143

Requester's name and address (optional)

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

2	7	–	2	1	6	3	9	4	8

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here  **Date** 06/06/2024

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

must obtain your correct taxpayer identification number (TIN), which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid).
- Form 1099-DIV (dividends, including those from stocks or mutual funds).
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds).
- Form 1099-NEC (nonemployee compensation).
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers).
- Form 1099-S (proceeds from real estate transactions).
- Form 1099-K (merchant card and third-party network transactions).
- Form 1098 (home mortgage interest), 1098-E (student loan interest), and 1098-T (tuition).
- Form 1099-C (canceled debt).
- Form 1099-A (acquisition or abandonment of secured property).

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

Caution: If you don't return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued);

2. Certify that you are not subject to backup withholding; or

3. Claim exemption from backup withholding if you are a U.S. exempt payee; and

4. Certify to your non-foreign status for purposes of withholding under chapter 3 or 4 of the Code (if applicable); and

5. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct. See *What Is FATCA Reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding. Payments made to foreign persons, including certain distributions, allocations of income, or transfers of sales proceeds, may be subject to withholding under chapter 3 or chapter 4 of the Code (sections 1441–1474). Under those rules, if a Form W-9 or other certification of non-foreign status has not been received, a withholding agent, transferee, or partnership (payor) generally applies presumption rules that may require the payor to withhold applicable tax from the recipient, owner, transferor, or partner (payee). See Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities.

The following persons must provide Form W-9 to the payor for purposes of establishing its non-foreign status.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the disregarded entity.
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the grantor trust.
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust and not the beneficiaries of the trust.

See Pub. 515 for more information on providing a Form W-9 or a certification of non-foreign status to avoid withholding.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person (under Regulations section 1.1441-1(b)(2)(iv) or other applicable section for chapter 3 or 4 purposes), do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515). If you are a qualified foreign pension fund under Regulations section 1.897(l)-1(d), or a partnership that is wholly owned by qualified foreign pension funds, that is treated as a non-foreign person for purposes of section 1445 withholding, do not use Form W-9. Instead, use Form W-8EXP (or other certification of non-foreign status).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a saving clause. Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if their stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first Protocol) and is relying on this exception to claim an exemption from tax on their scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include, but are not limited to, interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third-party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester;

2. You do not certify your TIN when required (see the instructions for Part II for details);

3. The IRS tells the requester that you furnished an incorrect TIN;

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only); or

5. You do not certify to the requester that you are not subject to backup withholding, as described in item 4 under "*By signing the filled-out form*" above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier.

What Is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all U.S. account holders that are specified U.S. persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you are no longer tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

• **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note for ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040 you filed with your application.

• **Sole proprietor.** Enter your individual name as shown on your Form 1040 on line 1. Enter your business, trade, or "doing business as" (DBA) name on line 2.

• **Partnership, C corporation, S corporation, or LLC, other than a disregarded entity.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

• **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. Enter any business, trade, or DBA name on line 2.

• **Disregarded entity.** In general, a business entity that has a single owner, including an LLC, and is not a corporation, is disregarded as an entity separate from its owner (a disregarded entity). See Regulations section 301.7701-2(c)(2). A disregarded entity should check the appropriate box for the tax classification of its owner. Enter the owner's name on line 1. The name of the owner entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, enter it on line 2.

Line 3a

Check the appropriate box on line 3a for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3a.

IF the entity/individual on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation.
• Individual or • Sole proprietorship	Individual/sole proprietor.
• LLC classified as a partnership for U.S. federal tax purposes or • LLC that has filed Form 8832 or 2553 electing to be taxed as a corporation	Limited liability company and enter the appropriate tax classification: P = Partnership, C = C corporation, or S = S corporation.
• Partnership	Partnership.
• Trust/estate	Trust/estate.

Line 3b

Check this box if you are a partnership (including an LLC classified as a partnership for U.S. federal tax purposes), trust, or estate that has any foreign partners, owners, or beneficiaries, and you are providing this form to a partnership, trust, or estate, in which you have an ownership interest. You must check the box on line 3b if you receive a Form W-8 (or documentary evidence) from any partner, owner, or beneficiary establishing foreign status or if you receive a Form W-9 from any partner, owner, or beneficiary that has checked the box on line 3b.

Note: A partnership that provides a Form W-9 and checks box 3b may be required to complete Schedules K-2 and K-3 (Form 1065). For more information, see the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

If you are required to complete line 3b but fail to do so, you may not receive the information necessary to file a correct information return with the IRS or furnish a correct payee statement to your partners or beneficiaries. See, for example, sections 6698, 6722, and 6724 for penalties that may apply.

Line 4 Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

• Generally, individuals (including sole proprietors) are not exempt from backup withholding.

• Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

• Corporations are not exempt from backup withholding for payments made in settlement of payment card or third-party network transactions.

• Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space on line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2).

2—The United States or any of its agencies or instrumentalities.

3—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities.

5—A corporation.

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or territory.

7—A futures commission merchant registered with the Commodity Futures Trading Commission.

8—A real estate investment trust.

9—An entity registered at all times during the tax year under the Investment Company Act of 1940.

10—A common trust fund operated by a bank under section 584(a).

11—A financial institution as defined under section 581.

12—A middleman known in the investment community as a nominee or custodian.

13—A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
• Interest and dividend payments	All exempt payees except for 7.
• Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
• Barter exchange transactions and patronage dividends	Exempt payees 1 through 4.
• Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5.[2]
• Payments made in settlement of payment card or third-party network transactions	Exempt payees 1 through 4.

[1] See Form 1099-MISC, Miscellaneous Information, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) entered on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax-exempt trust under a section 403(b) plan or section 457(g) plan.

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, enter "NEW" at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have, and are not eligible to get, an SSN, your TIN is your IRS ITIN. Enter it in the entry space for the Social security number. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/EIN*. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or Form SS-4 mailed to you within 15 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and enter "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, you will generally have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon. See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier, for when you may instead be subject to withholding under chapter 3 or 4 of the Code.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third-party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))**	The grantor*
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing Form 1041 or under the Optional Filing Method 2, requiring Form 1099 (see Regulations section 1.671-4(b)(2)(i)(B))**	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name on line 1, and enter your business or DBA name, if any, on line 2. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

* **Note:** The grantor must also provide a Form W-9 to the trustee of the trust.

** For more information on optional filing methods for grantor trusts, see the Instructions for Form 1041.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information, such as your name, SSN, or other identifying information, without your permission to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax return preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity, or a questionable credit report, contact the IRS Identity Theft Hotline at 800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 877-777-4778 or TTY/TDD 800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Go to *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and territories for use in administering their laws. The information may also be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payors must generally withhold a percentage of taxable interest, dividends, and certain other payments to a payee who does not give a TIN to the payor. Certain penalties may also apply for providing false or fraudulent information.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

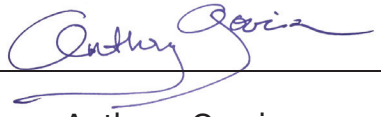
B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature 

Printed Name Anthony Garcia

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He is the Co-owner
(Owner, Partner, Officer, Representative or Agent) of
The Street Plans Collaborative, Inc. the Proposer that has submitted the attached proposal.

(2) He is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

April Samide
Witness

By: Anthony Garcia
Signature

Mike Lydon
Witness

Anthony Garcia, Principal
Print Name and Title



1. Summary

Meeting title	Pre-Bid meeting for RFP NO: 24-
Attended participants	6
Start time	9/19/24, 9:28:48 AM
End time	9/19/24, 9:46:44 AM
Meeting duration	17m 56s
Average attendance time	10m 39s

2. Participants

Name	First Join	Last Leave	In-Meeting Duration	Email	Participant ID (UPN)	Role
Junior Bergel	9/19/24, 9:28:51 AM	9/19/24, 9:46:38 AM	17m 47s	jbergel@Opalockafl.gov	jbergel@OpaLockaFL.gov	Organizer
Adelina Gross	9/19/24, 9:31:08 AM	9/19/24, 9:46:35 AM	15m 26s	agross@Opalockafl.gov	agross@OpaLockaFL.gov	Presenter
Carlos Gonzalez	9/19/24, 9:32:30 AM	9/19/24, 9:46:44 AM	14m 14s	cgonzalez@Opalockafl.gov	cgonzalez@OpaLockaFL.gov	Presenter
tony	9/19/24, 9:33:48 AM	9/19/24, 9:34:55 AM	1m 6s			Presenter
Anthony Garcia (External)	9/19/24, 9:34:41 AM	9/19/24, 9:46:35 AM	11m 53s	tony@streetplans.org	tony@streetplans.org	Presenter
Alex (Unverified)	9/19/24, 9:43:07 AM	9/19/24, 9:46:36 AM	3m 28s			Presenter

3. In-Meeting Activities

Name	Join Time	Leave Time	Duration	Email	Role
Junior Bergel	9/19/24, 9:28:51 AM	9/19/24, 9:46:38 AM	17m 47s	jbergel@Opalockafl.gov	Organizer
Adelina Gross	9/19/24, 9:31:08 AM	9/19/24, 9:46:35 AM	15m 26s	agross@Opalockafl.gov	Presenter
Carlos Gonzalez	9/19/24, 9:32:30 AM	9/19/24, 9:46:44 AM	14m 14s	cgonzalez@Opalockafl.gov	Presenter
tony	9/19/24, 9:33:48 AM	9/19/24, 9:34:55 AM	1m 6s		Presenter
Anthony Garcia (External)	9/19/24, 9:34:41 AM	9/19/24, 9:46:35 AM	11m 53s	tony@streetplans.org	Presenter
Alex (Unverified)	9/19/24, 9:43:07 AM	9/19/24, 9:46:36 AM	3m 28s		Presenter

CITY OF OPA-LOCKA

RFP NO: 24-1009200
Art in the Right-of-Way Services

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ADVERTISEMENT

RFP 24-1009200
Art in the Right-of-Way

The sealed proposal for Artscape in the Right-of-Way Services for the City of Opa-locka will be received by the City's Clerk Office, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, **Wednesday October 9, 2024, by 2:00 p.m.** Any RFP Package received after the designated closing time will be returned unopened. The City will accept proposals by mail; however, the proposal must be received by 2:00 p.m. ET on the due date. In addition, the proposal may be submitted via www.demandstar.com (e-bid) by 2:00 p.m. ET.

The address to submit sealed proposal is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked **RFP 24-1009200 Art in the Right-of-Way.**

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that proposer whose proposal best complies with the **RFP NO: 241009200** requirements.

Joanna Flores
City Clerk

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka seeks proposals for Artscape in the Right-of-Way Services. These services must be efficient, and economical, and adhere to industry standards and best practices. The Contract will be awarded to the highest ranked Proposer, as described in the Evaluation Procedures Section below.

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail. However, it is Proposer's responsibility to submit Proposer's proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 p.m. ET on 10/09/2024. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: **RFP NO. 24-1009200 Art in the Right-of-Way Services.**

This package shall also include the Proposer's return address. Proposers may withdraw their proposals by notifying the City in writing at any time prior to the deadline for proposal submittal. After the deadline, the proposal will constitute an irrevocable offer, for a period of 90 days. Once opened, proposals become a record of the City and will not be returned to the Proposer. The City cautions Proposers to ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611 option 1 before proposal closing time. Any proposal received after the established deadline **will not** be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an **original and six (6) copies (a total of 7) plus one copy on USB flash drive in PDF format** of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail or any other delivery medium.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the RFP.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the RFP until eight (8) days before the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the RFP so that they may read and interpret such for themselves. The City's Procurement Officer is authorized to interpret any portion of this RFP or give information as to the requirements of the RFP in addition to what is contained in the written RFP document.

1-6. Addendum: The City may record its response to inquiries and any supplemental instructions as a written addendum. The City may post written addenda on its website up to three (3) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the RFP opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Procurement Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this RFP does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed, accepted by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties. The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re- advertise other proposals.

1-8. Contractual Agreement: This RFP and Contractor proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. All legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. **Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.**

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible**.**

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke exemptions to disclosure provided by law in the response to the RFP and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this RFP or the service, study, or project to which it relates.

1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions specified herein. In the event the Proposer is a governmental entity or a self-insured organization, different insurance requirements may apply. Misrepresentation of any material fact, whether intentional or not, regarding the

Proposers' insurance coverage, policies or capabilities may be grounds for rejection of the proposal and rescission of any ensuing Agreement.

1. Evidence of General Liability coverage with limits not less than $1,000,000 per Occurrence/ $2,000,000 Aggregate (Including Policy Number and Policy Period);

2. Evidence of Auto Liability coverage with limits not less than $1,000,000 per Occurrence/$1,000,000 Aggregate (Including Policy Number and Policy Period);

3. Evidence of Workers' Compensation coverage with statutory limits and Employer's Liability coverage with limits not less than $100,000 (Including Policy Number and Policy Period);

4.The City listed as an additional insured (this may be specifically limited to the specific job(s) the contractor will be performing);

5. Minimum 30-day written notice of cancellation.

1-13. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing processes because they have been found guilty of a public entity crime. No public entity shall award any contract to or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the RFP proposal forms, Proposer attests that it has not been placed on the "Convicted Vendor List".

1-14. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work, goods or services for the City of Opa-locka.

1-15. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

1-16. Protests: Protests of the plans, specifications, and other requirements of the request for proposal and bids must be received in writing by the City Clerk's Office within at least ten (10) working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-17. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City determines that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a

Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances.

A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (RFP), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**	
Release Date	8/30/2024	
Pre-Bid Meeting	TBA	
Written Questions Due	9/20/2024 @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "RFP No: Bid Questions"	
Response to Questions	9/27/2024 @ 5:00pm	
Due Date/Bid Opening	10/09/2024 @ 2:00 pm	
1st Evaluation Committee Meeting	TBA	
Award Recommendation	TBA	
Commission Approval	TBA	
Post Award	TBA	

PART II
SCOPE OF SERVICES

Artscape Services

Purpose

The City of Opa-locka is seeking proposals from: City of Opa-locka residents, faith-based organizations, associations, non-profit organizations, schools, qualified artists, designers, and creative teams to integrate art into various public infrastructure projects, specifically focusing on City roadways and associated public spaces and maximizing community participation in the selection and implementation of various projects.

This initiative aims to enhance the aesthetic appeal, cultural identity, and community engagement within the City, creating vibrant and visually stimulating environments that reflect the diverse community values.

Goals:

- Establish a public art presence in the City.
- Create public art for an outdoor environment that reflects the spirit, history, and uniqueness of the City of Opa-locka.
- Engage and guarantee active community participation for this project.

Scope of Work

Artist Scope of Work

Artists/Artist Teams/Organizations submitting proposals are responsible for the following:

The selected proposals will encompass the following key areas:

1. **Roadway Art Integration:** Artistic enhancements and installations along selected City roadways, intersections, pedestrian walkways, and bridges.
2. **Public Infrastructure Art:** Artistic design for public infrastructure elements such as bus stops, benches, streetlights, signage, and other urban furniture.
3. **Community Engagement:** Proposals should include plans for community involvement, active participation and interaction, ensuring that the art installations resonate with local residents, visitors and the history of the City of Opa-locka.
4. **Maintenance and Longevity:** Considerations for durability, maintenance requirements, and longevity of the art installation
5. **Schedule and Timeline**

Proposal Requirements: Interested parties are requested to submit comprehensive proposals that include the following components:

- **Artist Statement:** A clear articulation of the artistic vision, concept, and approach to integrating art into the urban infrastructure.
- **Portfolio:** Examples of past projects demonstrating experience in public art installations and urban design.
- **Project Plan:** Detailed timeline, budget breakdown, and logistical plan for executing the proposed artworks.
- **Community Engagement Strategy:** Description of how the project will engage and involve local the community throughout the design and implementation phases, how the project will integrate the active participation of Opa-locka Residents and Organizations.
- **Maintenance Plan:** Outline of maintenance needs, including frequency of upkeep and potential partnerships with City maintenance services.
- **Clear Schedule and Timeline**
- **Pilot Project** – This is a pilot project with a budget of $62,500

Proposed projects and designs will be evaluated by a City Selection Committee and final selection will be based on the City's needs and preferences. The information included as part of this Request of Proposal is only for reference and illustrative purposes.

References, pictures, and details of similar projects must be provided with the proposal.

ALL MATERIALS BEING CONSIDERED FOR RIGHT-OF-WAY ART MUST COMPLY WITH FLORIDA DEPARTMENT OF TRANSPORTATION, MIAMI-DADE COUNTY AND CITY OF OPA-LOCKA STANDARDS AND REQUIREMENTS.

Evaluation Criteria: Proposals will be evaluated based on the following criteria:

- Artistic excellence and creativity in integrating art with the urban infrastructure.
- Feasibility and practicality of the proposed project plan.
- Potential impact on community engagement, active participation and public interaction.
- Sustainability and maintenance considerations.
- Schedule and Timeline

PART III
PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this RFP.

3-2 MINIMUM SUBMISSION REQUIREMENTS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents
Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal
- 3.2.3.1 Limit to one or two pages.
- 3.2.3.2 Briefly state the Proposer's understanding of the work to be done.
- 3.2.3.3 Give the names of the persons authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3.2.4 Tab 3 - General Information
- 3.2.4.1 Name of Proposer's business
- 3.2.4.2 Mailing Address and Phone Number.
- 3.2.4.3 Names and contact information of persons to be contacted for information or services if different from the person in charge.
- 3.2.4.4 Location from which the work is to be done

3.2.5 Tab 4 – Project Approach
Describe in detail the proposal to fulfill the requirements of the scope of services listed in Part II of this RFP.

3.2.6 Tab 5 – Experience and Qualifications
- 3.2.6.1 Specify the number of years the Proposer has been in business.
- 3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this RFP.

3.2.7 Tab 6 – Schedule
- 3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Program.
- 3.2.7.2 Indicate the earliest available start date for Proposer's project team.
- 3.2.7.3 Indicate the project completion date based on the date provided in 3.2.7.1.

3.2.8 Tab 8 – References
- 3.2.8.1 List a minimum of three (3) references in Florida for which the Proposer has provided services outlined in the RFP. Include the name of the organization, brief description of the project, name of contact person telephone number and email address.

3.2.9 Tab 9 – Additional Forms

Proposers must complete and submit as part of its Proposal all the following forms and/or documents.

- Proposer Qualifications
- Certification regarding debarment and suspension
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verification

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY THE PROPOSER.

PART IV
EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee, consisting of City personnel, will convene, review, and discuss all proposals submitted. The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the RFP, including a detailed explanation of how the services shall be performed.

Each proposal will be reviewed to determine if the Proposal is responsive to the submission requirements outlined in the Solicitation. A responsive Proposal is one which follows the requirements of this Solicitation that includes all documents submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. The Contract (s) will be awarded to the most responsive Proposer whose Proposal best serves the interest of and represents the best value to the City of Opa-locka.

4-2 EVALUATION CRITERIA

The Committee may select and choose to invite any and/or or all firms to make presentations and be interviewed by the Committee as part of the evaluation process for this Solicitation. The Committee's decision will be communicated by staff to all Proposers. The Proposer's presentation may clarify but may not modify their submitted Proposal. Any discussion between the presenter and Evaluation Committee during presentations is intended only for purposes of providing clarification in response to questions from the Committee.

Category	Weight
Qualifications to provide the services outlined in the RFP	15%
Experience with providing the services outlined in the RFP	15%
Resources and approach in response to the criteria identified in Part II	70%
TOTAL	100%

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee to clarify their proposals. Only those firms with the highest rated scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentation evaluation phase. References and site visits (if completed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this RFP, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated Agreement. The City's decisions will be final. Following the selection of firm, the expectation is that an Agreement will be executed between both parties. City staff will recommend the award to the responsible Proposer whose Proposal is determined to provide overall best value to the City, considering the evaluation factors in this RFP.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. The length of time in business:_____years

6. The length of time (continuous) in business as a service organization in Florida:
   _____years

7. Provide a list of at least three references that the Proposer has supplied services meeting the requirements of this RFP during the last twenty-four months.

   _____

   _____

   _____

   _____

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20____

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large

My commission expires:

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

EVALUATION FORM

RFP 24-1009200
Art in the Right-of-Way Services

Criterion	Weight Points	Description
Qualifications	15.00	Qualifications to provide the services outlined in the RFP
Experience	15.00	Experience with providing the services outlined in the RFP
Resources and Approach	70.00	Resources and approach in response to the criteria identified in Part II
Total	**100.00**	

EVALUATION FORM

RFP 24-1009200
Art in the Right-of-Way Services

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: _____ **Date:** _____

Signature: _____

Firm Name: The Street Plans Collaborative

Evaluation

Notes:

Criterion	Points
Qualification	
Experience	
Resources and Approach	

Firm Name: _____

Evaluation

Notes:

Criterion	Points
Qualification	
Experience	
Resources and Approach	

Firm Name: _____

Evaluation

Notes:

Criterion	Points
Qualification	
Experience	
Resources and Approach	

EVALUATION MATRIX

RFP 24-1009200
Art in the Right-of-Way Services

Firm Name:

Evaluation

Criterion	Weighted Points	Reviewer Name: Adelina Gross		Yesly Guillen		Carlos Gonzalez					
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Qualification	15.00	15	15.00	15	15.00	15	15.00		0.00		0.00
Experience	15.00	15	15.00	15	15.00	15	15.00		0.00		0.00
Resources and Approach	70.00	30	30.00	55	55.00	65	65.00		0.00		0.00
			0.00		0.00		0.00		0.00		0.00
Total	**100.00**		**60.00**		**85.00**		**95.00**		**0.00**		**0.00**

EVALUATION MATRIX

RFP 24-1009200
Art in the Right-of-Way Services

FIRM SELECTED

Reviewer:

Adelina Gross	60.00	0.00	0.00	0.00	0.00
Yesly Guillen	85.00	0.00	0.00	0.00	0.00
Carlos Gonzalez	95.00	0.00	0.00	0.00	0.00
0					
0					
AVERAGE RATING	**80.00**	**0.00**	**0.00**	**0.00**	**0.00**

CITY OF OPA-LOCKA
CERTIFICATION

REQUEST FOR PROPOSALS
RFP NO. 24-1009200

Art in the Right-of-Way Services

I, Joanna Flores, City Clerk of the City of Opa-locka, Florida, do hereby certify that sealed proposals were received and opened at the Opa-locka Municipal Complex, 780 Fisherman Street, 4th Floor, Opa-locka, Florida, at 8:29 a.m. this 11th day of October, 2024.

PROPOSAL(S) RECEIVED

NAME/ADDRESS	**Total Cost**
1. **The Street Plans Collaborative, Inc.** **6815 SW 57 Terrace** **Miami, FL 33143** **Contact: Tony Garcia, RA, Principal & Co-Founder** **Tel: 305.978.6426** **Email: tony@streetplans.org**	**$62,500.00**

Please note that the proposal from The Street Plans Collaborative, Inc. was submitted via DemandStar (e-bid) and provided to the City Clerk's Office by Junior Bergel, City of Opa-locka Procurement Office since the Office of the City Clerk does not have access to DemandStar.

I further certify that proposal(s) were submitted and properly opened in the presence of the following:

Junior Bergel
Procurement Officer
City of Opa-locka

Joanna Flores, CMC
City Clerk
City of Opa-locka

Addendum1

RFP 24-1009200
Art in the Right-of-Way Services

Addendum 1: Change in Due Date

Due to the impact of the severe weather conditions, the deadline for submitting the Request for Proposal (RFP) for Art in The Right-of-Way Services, with reference number 24-1009200, has been rescheduled to Thursday, October 10, 2024.

Original Due Date: **Wednesday, October 9, 2024, by 2:00pm.**
New Due Date: **Thursday, October 10, 2024, by 2:00pm.**

Sponsored by: Interim City Manager

RESOLUTION NO. 24-XXXX

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO NEGOTIATION FOR ARTISTIC SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City Administration believes it is in the best interest of the City of Opa-Locka ("City") to enter into negotiation with ArtPad Inc for Artistic Services; and

WHEREAS, pursuant to Section 2-318(4)(g) of the City's Purchasing Code (as approved by Ordinance 2020-07), Artistic Services are not subject to competitive solicitation requirements; and

WHEREAS, the Interim City Manager is seeking authorization from the City Commission to enter into negotiation with ArtPad Inc for Artistic Services, for the City's beautification and cultural enhancement, for an amount not to exceed One Hundred Twenty-Five Thousand Dollars ($125,000.00); and

WHEREAS, the City Commission has determined that authorizing the City Manager to enter into negotiation with ArtPad Inc for Artistic Services, for the City's beautification and cultural enhancement, for an amount not to exceed One Hundred Twenty-Five Thousand Dollars ($125,000.00) is in the best interest of the City and its residents.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA:

Section 1. Recitals Adopted.

The recitals to the preamble herein are incorporated by reference.

Section 2. Approval to Negotiate. The City Commission of the City of Opa-Locka hereby authorizes the City Manager to enter into negotiation with ArtPad, Inc for Artistic Services, for the City's beautification and cultural enhancement, for an amount not to exceed One Hundred Twenty-Five Thousand Dollars ($125,000.00).

Section 3. Scrivener's Errors. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors, which do not affect the intent of this Resolution may be authorized by the Interim City Manager, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. Effective Date. This Resolution shall take effect immediately upon adoption by the City Commission of the City of Opa-Locka.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

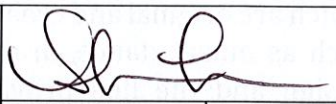
Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____ (Yes)	_____ (No)
Commissioner Kelley	_____ (Yes)	_____ (No)
Commissioner Williams	_____ (Yes)	_____ (No)
Vice Mayor Ervin	_____ (Yes)	_____ (No)
Mayor Taylor	_____ (Yes)	_____ (No)

City of Opa-locka
Agenda Cover Memo

Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**				
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**	
				X				
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**	
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		X
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**	
							X	
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**					
		X	**24-1009200**					
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:**		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*			
	X		**Enhance Organizational** ☐ **Bus. & Economic Dev** ■ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐					
Sponsor Name	Interim City Manager		**Department:**		City Manager			

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA AUTHORIZING THE INTERIM CITY MANAGER AND THE CITY ADMINISTRATION TO ADHERE TO FS 287.057 FOR ARTISTIC SERVICES AND ENTER INTO NEGOTIATION WITH ARTPAD INC FOR ART IN THE RIGHT OF WAY SERVICES.

Staff Summary:

History: The City Commission approved the issuance of RFP No. 24-1009200 to solicit competitive proposals for the ARPA funded project of Art in Right of Way Services. One (1)

proposal was received on October 8th, 2024, and certified by the City Clerk which was not in compliance with the services being requested in the RFP.

The City Administration believes it is in the best interest of the City to enter into negotiations with ArtPad Inc for Artistic Services which are not subject to competitive solicitation requirements according to the City Code of Ordinances SCC.2-318(4)(g) "Artistic services which are original and creative in character and skill in a recognized field of artistic endeavor such as music, dance, drama, painting, and sculpture, photography, culinary arts, fashion design and the like provided however, that contracts for artistic instructors, coaches, teachers, aides, and assistants are deemed contractual services subject to the requirements of competitive procurement"."

The City Administration is seeking authorization from the City Commission to enter into a contract for Artistic Services with ArtPad Inc for the City's Beautification and Cultural Enhancement not to exceed $125,000.

Financial Impact: The FY 2025 budget for Artscape is initially set at $31,500 in account 44-53839. Additional funds will be carried over from FY 2024 in Budget Amendment #1, bringing the total proposed allocation for Artscape in FY 2025 to $62,500. Should the cancellation of the Tree Planting RFP be approved, staff recommends combining the Artscape and Tree Planting funds, resulting in a total of $125,000 allocated to the Artscape account. This reallocation will also occur in Budget Amendment #1. There are no long-term, ongoing expenditures to the General Fund for this item

Proposed Action:

Staff recommends the City Commission approve the recommendation to enter into a direct Agreement with ArtPad Inc.

Attachment:

ArtPad Inc (ArtCodes Catalog of Services)
Agreement between the City of Opa-locka and ArtPad Inc.



THE ARTCODES

A VISUAL ARTIST MANAGEMENT GROUP

ABOUT



The Art codes is a for profit company that has been established since 2018 and works with a diversified set of global wide artists.



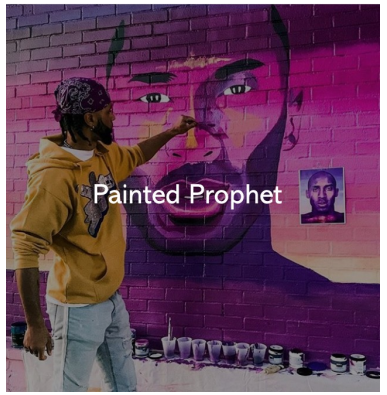
We specialize in partnerships with public art projects, non-profit organizations, marketing companies and pre-development properties.

ARTIST PORTFOLIO

- Jonathan Desrosiers
- Liliette Arts
- Painted Prophet
- Stefano Alcantara
- Marcus Blake



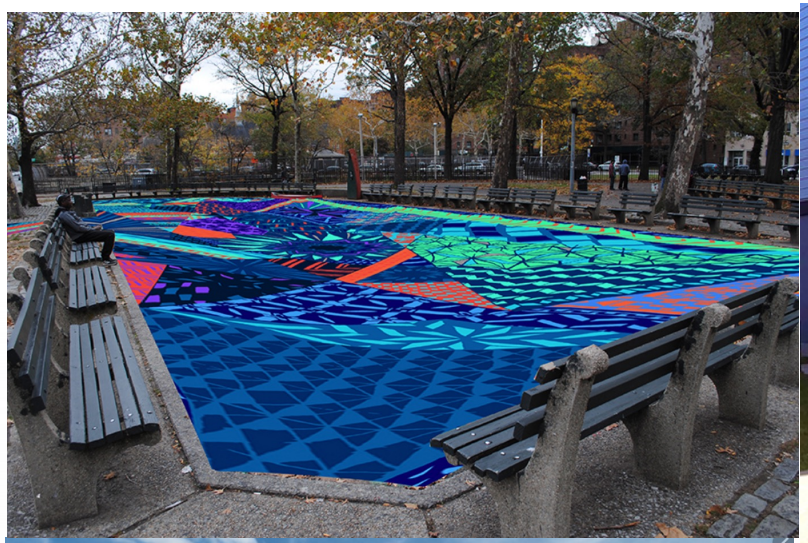






BEAUTIFYING - CITY OF MIAMI

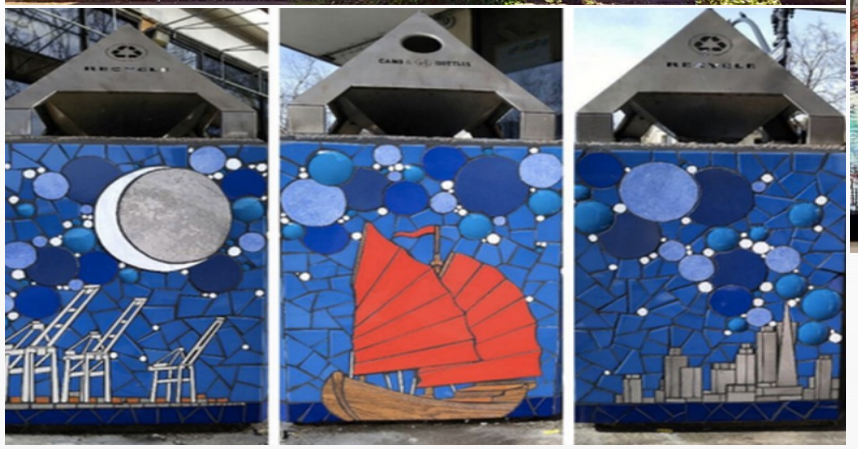
- Bus stops/Shuttles
- Public city busses and trolleys
- City garbage cans
- Murals on child friendly playgrounds
- Murals on basketball courts
- Fences
- Public art sculptors




3500


DOWNTOWN






PUBLIC ART
GREATER DES MOINES
FOUNDATION
SUSAN CHRYSLER WHITE

FAMILIES BELONG TOGETHER MURAL

LOCATED IN WYNWOOD

On June 26, US District Judge Dolly Gee ordered ICE to release migrant children from family detention centers by July 17. This deadline was extended to July 27. As the order only applies to releasing children, immigrant families are facing irreparable harm in being forced to choose between family separation or continued detention of children.

In the midst of the racial reckoning currently underway in the United States the powerful imagery these artists offer provides insight into all that we must not return to and all that we must build to become a safer, stronger and more just country.

Jonathan Desrosiers, a Haitian-American artist represented by visual artist management company The Artcodes, has created a mural in Miami focused on the bond between a mother, father and their child to highlight the foundation of this relationship and the importance of keeping families together.

"Anti-immigration sentiment is fundamentally rooted in anti-Black sentiment in terms of who does and does not have the right to be a citizen," continued Selden. "All immigrants have the right to receive assistance, the right to protection from abuse and the freedom to seek asylum, regardless of who they are or where they come from."

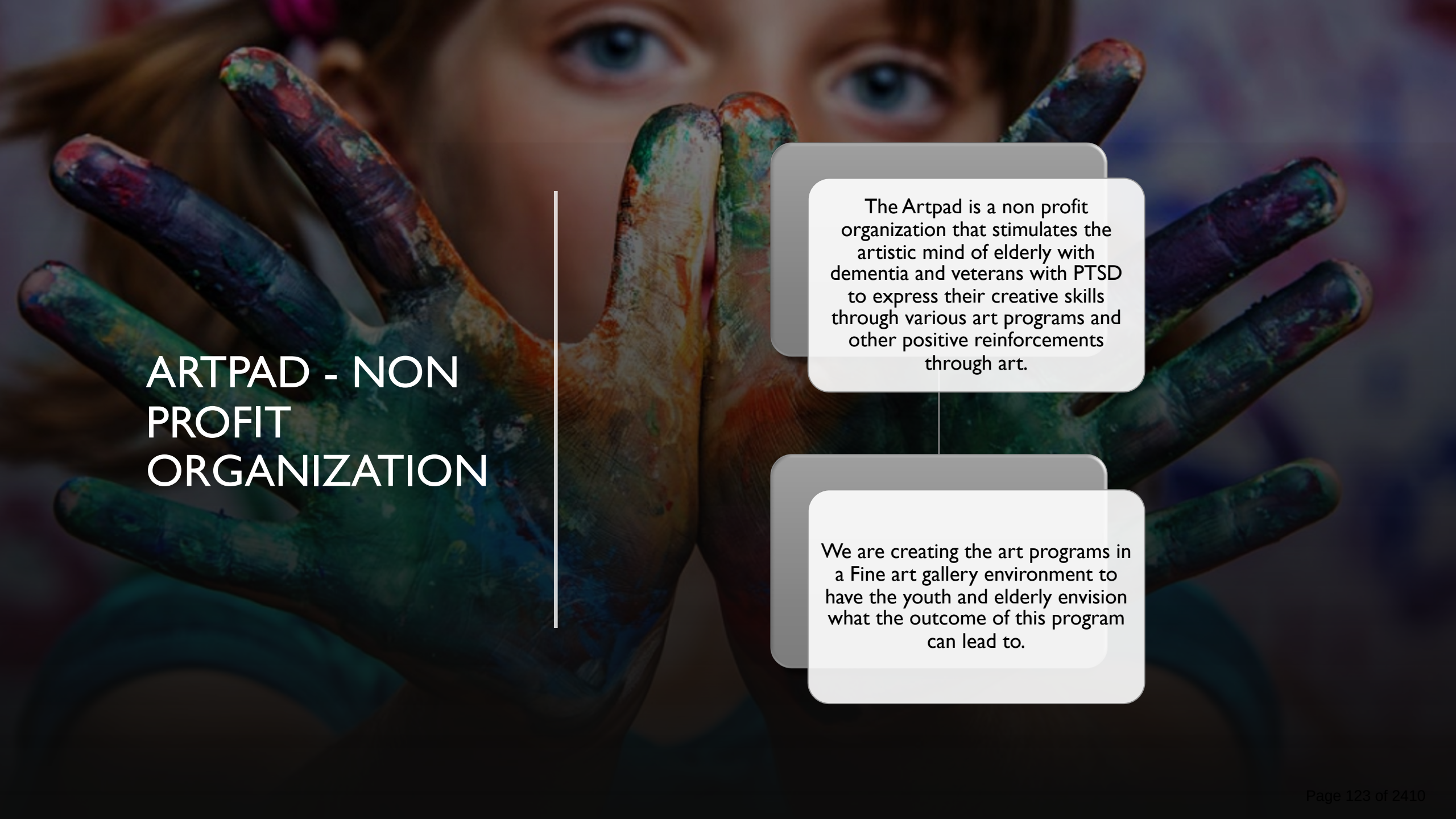
"When I learned about families being separated, I thought about my own family," said Desrosiers. "I thought about how it feels to be rooted together and the importance of having that foundation. In my artwork, I wanted to communicate and highlight these foundations of family and community, and emphasize how important it is to keep families together— something that should be taught as a fundamental right."

The mural is located at NW 2nd Ave & NW 24th St, Miami, FL 33127, and the photos and video of it can be found here. The wall in Wynwood was generously donated by Goldman Properties.

###

The Families Belong Together coalition *includes nearly 250 different groups comprising tens of thousands of Americans from all backgrounds who have joined together to fight family separation and anti-immigrant policies. Led by the National Domestic Workers Alliance, MoveOn, the ACLU, FWD.us and The Leadership Conference on Civil and Human Rights, the Families Belong Together coalition organized the National Day of Action that saw hundreds of thousands of people protest the family separation policy and other immigration policies at more than 780 events in all 50 states. The coalition is at the forefront of the fight to permanently end family separation and incarceration and immediately reunite all families who remain torn apart.*





ARTPAD - NON PROFIT ORGANIZATION

The Artpad is a non profit organization that stimulates the artistic mind of elderly with dementia and veterans with PTSD to express their creative skills through various art programs and other positive reinforcements through art.

We are creating the art programs in a Fine art gallery environment to have the youth and elderly envision what the outcome of this program can lead to.





ARTPAD - NON PROFIT ORGANIZATION

- Children often find it difficult to find words and to express themselves and communicate their feelings. They may not feel comfortable or even want to talk to adults especially when there are expectations that they 'should' talk.
- Rather, a safe space is created for the child or adolescent to express themselves at their own pace and in their own way.
- Given a safe contained space to do so, children innately know exactly what they need (in terms of art materials) and what they want to do or make in the room.
- The art becomes the bridge between the unconscious and conscious, allowing what has not yet formed into words to be expressed and released. This can then later be processed, reflected on and explored in order to find meaning.
- Some of the benefits of Artpad are that children will develop their innate creativity and spontaneity and imagination, build confidence, learn new skills, nurture emotional growth, work through difficulties, have the freedom to make decisions, experiment with and test out new ideas and ways of being in the world, expression and working through of emotions, anxiety and conflict.
- The process also develops personal insight, self-awareness and reflection, ordering of experiences visually and verbally, and of course relaxation.

WHY ART PROGRAMS?

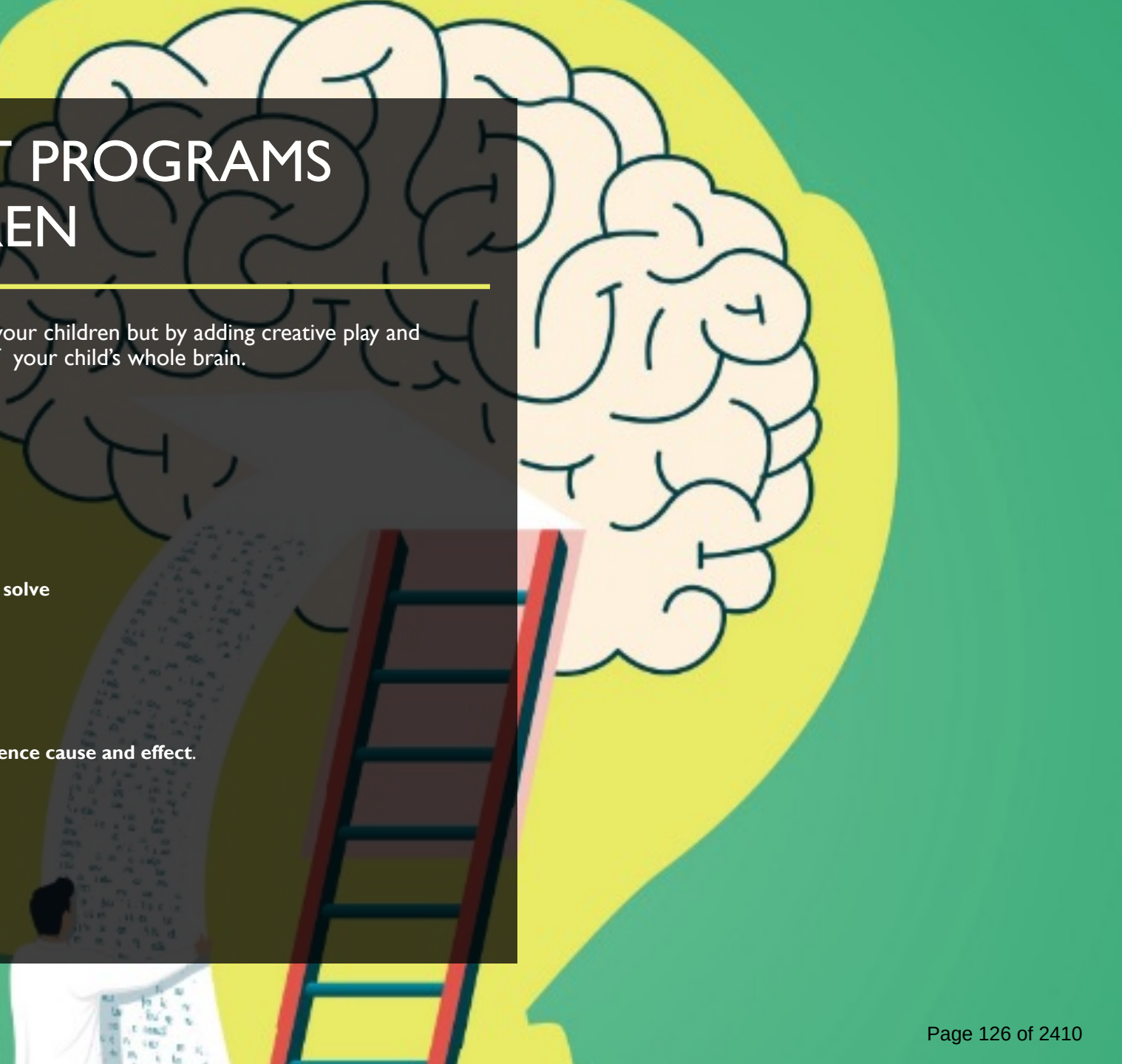
Art programs are not always affordable and accessible in low-income neighbor hoods and with this program we can promote the programs with various partnerships such as;

- Local libraries
- After school programs
- City programs

IMPORTANCE OF ART PROGRAMS FOR YOUNG CHILDREN

These skills and activities are necessary and beneficial to your children but by adding creative play and activities (like painting) you will help the overall growth of your child's whole brain.

- 10 Reasons Why Children Need to Paint
- 1. **1. Painting exercises your child's brain.**
- **2. Your child learns how to express their own feelings**
- **3. Painting builds self esteem.**
- **4. Your child learns how to make decisions and problem solve**
- **5. Painting helps relieve stress.**
- **6. Painting helps develop muscle control.**
- **7. Painting is a sensory experience.**
- **8. Painting provides opportunity for your child to experience cause and effect.**
- **9. Painting helps develop verbal language.**
- **10. Your child will build self-confidence.**



IMPORTANCE OF ART PROGRAMS FOR ELDERLY (65+)

- **Increased motor skills and coordination -** In the art programs the participants focus on a single task such as painting, drawing, sculpting, or another creative project. Engaging in these light physical activities helps to improve coordination and increases blood flow, which may improve dexterity in the hands, wrists, and fingers. As a result, art therapy can help adults with arthritis or other joint conditions manage inflammation and chronic pain.

- **Cognitive function and stimulation-** Engaging in the art programs it challenges people to think creatively and boosts cognitive function. The process of learning something new, such as a new art skill, helps to stimulate healthy brain activity and keep our minds sharp. Some studies even suggest that art may reduce the rate of development of memory conditions such as Alzheimer's disease. For seniors living with memory loss, the process of creating art can be an avenue for communication and self-expression.

- **Improved mood and mental health -** Art programs is known to lessen feelings of anxiety, depression, and stress in people of all ages.

- In one study older adults who participated in arts activities experienced lower levels of loneliness, depression, and better morale. Participants found that the calming action of putting a paintbrush or pencil to paper helped them relax and focus on positive feelings. Ultimately, art therapy can be a powerful tool to help older adults cope with common issues such as isolation, loneliness, and stress, which may be caused by age or health-related changes.

- **Opportunities for social connection -** In many cases, art programs occur in a social environment, which encourages participants to socialize and facilitate communication with those around them. For older adults who may struggle with feelings of loneliness or isolation, art therapy gives them the opportunity to exercise their social skills and make new friends in a relaxing, casual setting.



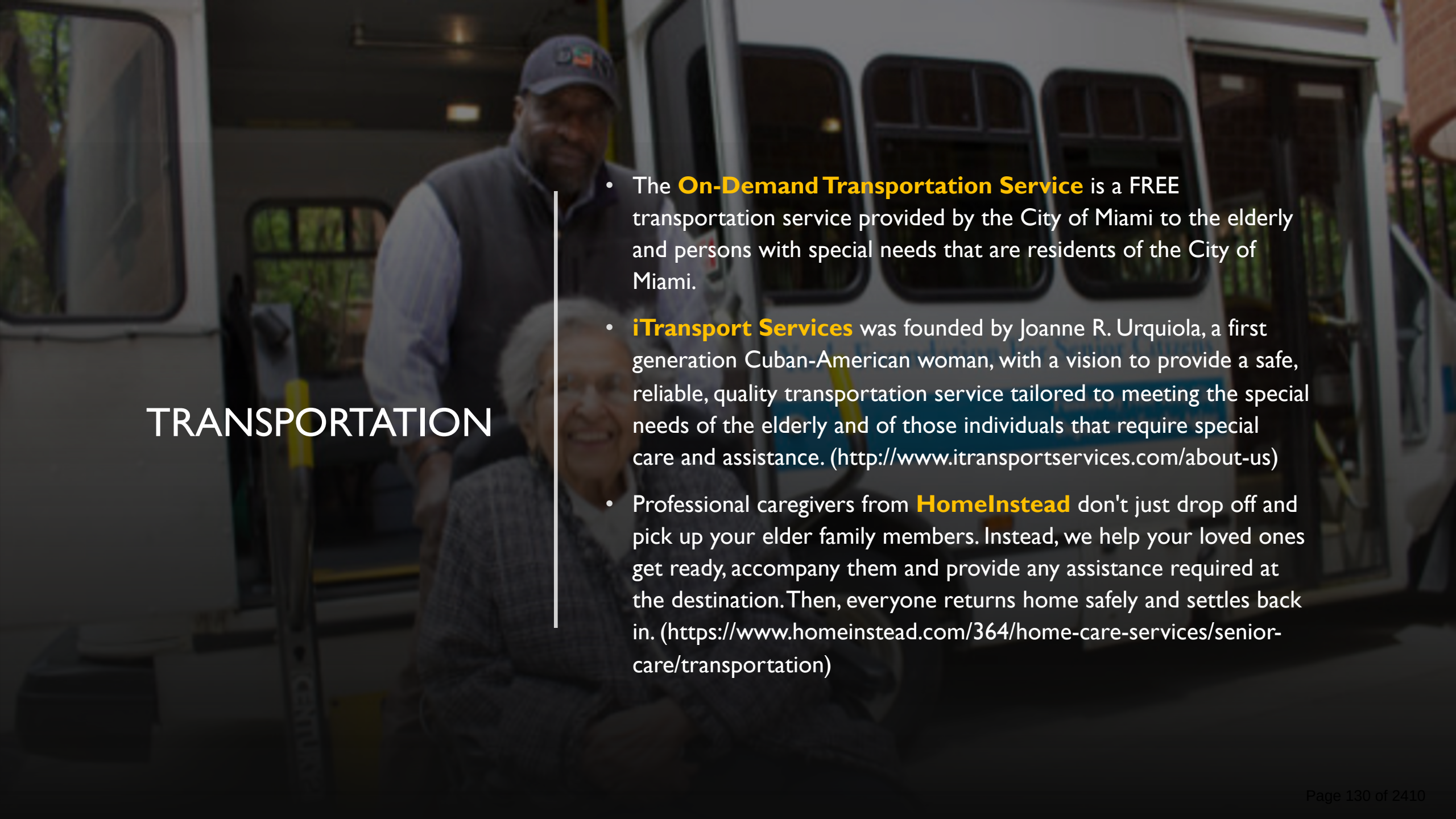


ARTPAD PROGRAMS OFFERED

- Elderly with dementia art therapy program
- Veterans with PTSD art therapy program
- 2 classes per day; 10 people per class
- From (9AM-10AM) (2PM-3PM) classes will be offered for the elderly 65+
- Once a month, family & friends Art display reception

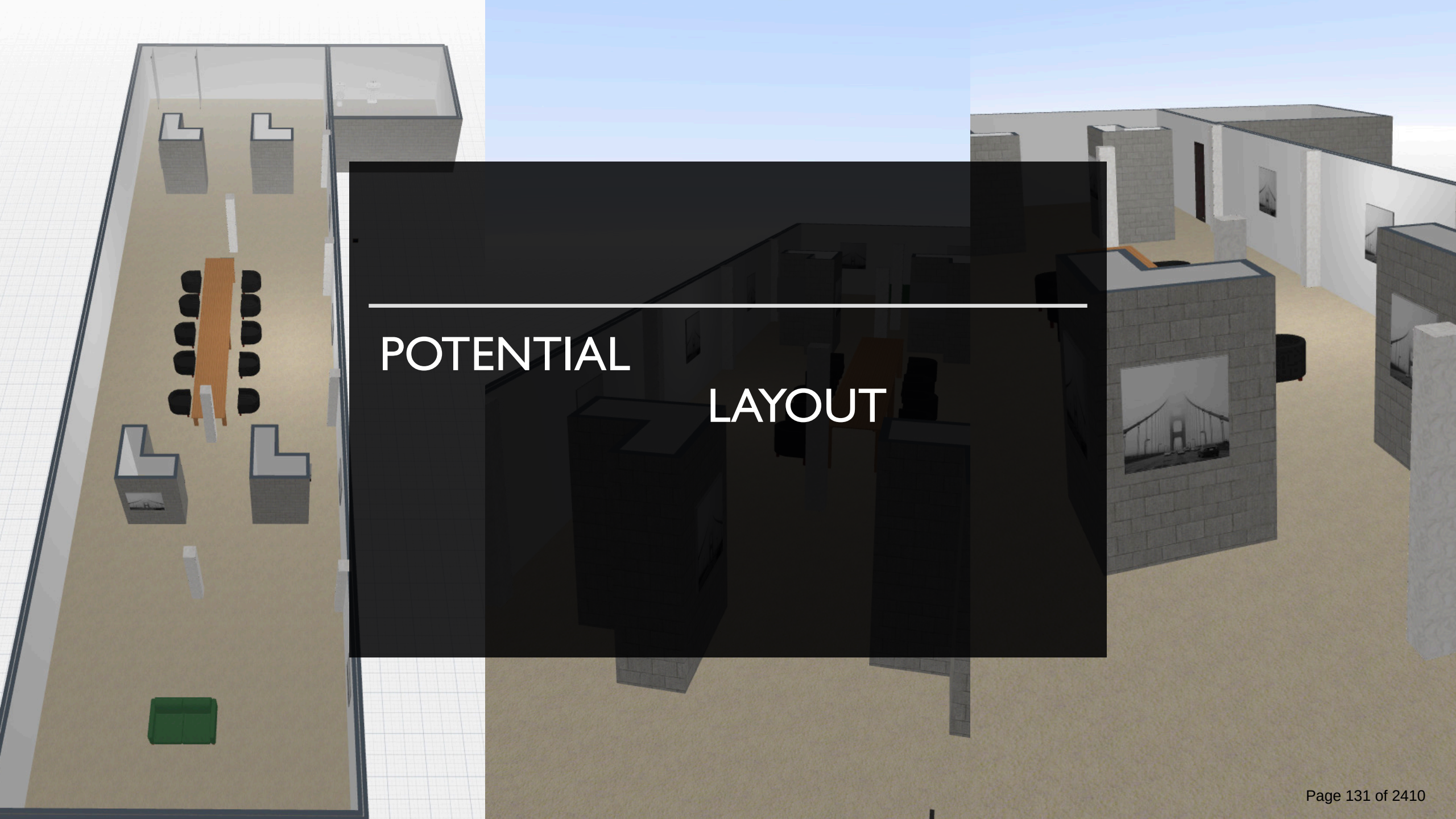
STAFF

- Licensed therapists
- Retired Veterans
- Artists that are managed by The Artcodes
- Internship programs will be offered with 3 earning credits at the end of the term
- Volunteering program in the local community



TRANSPORTATION

- The **On-Demand Transportation Service** is a FREE transportation service provided by the City of Miami to the elderly and persons with special needs that are residents of the City of Miami.
- **iTransport Services** was founded by Joanne R. Urquiola, a first generation Cuban-American woman, with a vision to provide a safe, reliable, quality transportation service tailored to meeting the special needs of the elderly and of those individuals that require special care and assistance. (http://www.itransportservices.com/about-us)
- Professional caregivers from **HomeInstead** don't just drop off and pick up your elder family members. Instead, we help your loved ones get ready, accompany them and provide any assistance required at the destination. Then, everyone returns home safely and settles back in. (https://www.homeinstead.com/364/home-care-services/senior-care/transportation)


POTENTIAL
LAYOUT



FUTURE PLANS - ARTPAD

- We are planning on teaming up with the NDSS (National down syndrome society) to create art classes for children and adults with disabilities.

Sponsored by: Interim City Manager

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK SOURCEWELL CONTRACT #FL-R10-GC02-111821- SCD WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR QUALIFIED PROFESSIONAL SERVICES FOR GENERAL CONSTRUCTION SERVICES (SOURCEWELL IFB #111821), AND ENTER INTO AN AGREEMENT WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR LIFT STATION #9 REPLACEMENT PROJECT SERVICES, IN AN AMOUNT NOT TO EXCEED ONE MILLION, ONE HUNDRED FORTY-NINE THOUSAND, SIX HUNDRED THIRTY-NINE DOLLARS AND NINETY-THREE CENTS ($1,149,639.93); PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City of Opa-Locka ("City") is seeking Lift Station 9 Replacement Services; and

WHEREAS, the Interim City Manager is requesting approval from the City Commission to piggyback the Sourcewell Professional Services Agreement with Shiff Construction & Development, Inc. and recommends that the City Commission accept the proposal from Shiff Construction & Development, Inc., attached hereto as Exhibit "A" for Lift Station 9 Replacement Services, in an amount not to exceed One Million, One Hundred Forty-Nine Thousand, Six Hundred Thirty-Nine Dollars and Ninety-Three Cents ($1,149,639.93); and

WHEREAS, Sourcewell previously awarded a contract to Shiff Construction & Development, Inc. for General Construction Services (attached as Exhibit "A"), pursuant to its Invitation for Bid (IFB) No. 111821, for a one-year period commencing December 29, 2021, with the option to extend the agreement up to two additional one-year periods, not to exceed a total of three years. The parties subsequently renewed the agreement twice, for a contract expiration date of December 28, 2024; and

WHEREAS, pursuant to Section 2-318(3) of the City's Purchasing Code (as approved by Ordinance 2020-07) the City may purchase and acquire under contracts with the federal government, the State of Florida or its political subdivisions and also municipal co-operative purchasing organizations and programs and when the City Manager has determined that the prices of the original contract are competitive and reasonable; and

WHEREAS, the project involves providing all necessary materials, labor, and equipment to replace Sewage Lift Station No. 9. This includes, but is not limited to: Excavation, demolition, and modification work; Abandoning the existing dry well; Removing the dry well chimney; Removing existing pumps, valves, piping, fittings, emergency discharge connections, sewer clean-out plugs, concrete slabs, and the top slab of the wet well; Removing and replacing in-kind the existing 6-foot chain link fence; Removing and relocating, as needed, the existing water meter and connecting it to the service line relocating the existing RTU antenna, electrical box, and concrete slab for electrical service, and relocating the existing backflow preventer unit and water faucet, as well as the existing plug valve; Providing, installing, operating, and removing temporary sewage effluent bypass pumps, equipment, and accessories; Installing a new concrete top slab for the wet well and valve vault structure; Installing aluminum access hatches for the wet well, valve vault, and emergency connection; Applying a protective coating for the wet well; Installing two 2.68 HP submersible pumps and related equipment; Installing a bubbler control system and associated equipment; Providing and installing a new meter and main disconnect; Implementing the proposed power /control system, including the necessary electrical panel, enclosure, telemetry system, and related equipment; Installing electrical conduits and junction boxes; Installing the RTU panel and SCAD A equipment provided by the Department; Performing electrical and mechanical work; Supplying all materials, equipment, and supplies needed for the pump station startup and testing; Installing sewage force main pipe and fittings, and connecting to the existing sewage force main; Replacing any sod, sidewalk, or pavement damaged during construction; Conducting site restoration and addressing any other appurtenant and miscellaneous items for a complete, satisfactory, and functional installation; and

WHEREAS, the City Commission finds that it is in the best interests of the City to piggyback Sourcewell Contract #FL-R9-GC01-111821-SCD with Shiff Construction & Development, Inc., attached hereto as Exhibit "B", in order to benefit from already negotiated rates and enter into an agreement, attached hereto as Exhibit "C", for Lift Station 9 Replacement Services, as provided herein, in an amount not to exceed One Million, One Hundred Forty-Nine Thousand, Six Hundred Thirty-Nine Dollars and Ninety-Three Cents ($1,149,639.93); and

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA LOCKA, FLORIDA:

Section 1. RECITALS ADOPTED.
The recitals to the preamble herein are incorporated by reference.

Section 2. AUTHORIZATION
The City Commission of the City of Opa-Locka, Florida hereby authorizes the Interim City Manager to piggyback Sourcewell Contract #FL-R9-GC01-111821-SCD with Shiff

Construction & Development, Inc., attached hereto as Exhibit "B", in order to benefit from already negotiated rates and enter into an agreement, attached hereto as Exhibit "C", for Lift Station 9 Replacement Services, as provided herein, in an amount not to exceed One Million, One Hundred Forty-Nine Thousand, Six Hundred Thirty-Nine Dollars and Ninety-Three Cents ($1,149,639.93).

SECTION 3. SCRIVENER'S ERRORS.

Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the City Manager, or the City Manager's designee, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. EFFECTIVE DATE.

This Resolution shall take effect upon the adoption and is subject to the approval of the Governor or Governor's Designee.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____
Commissioner Kelley	_____
Commissioner Williams	_____
Vice Mayor Ervin	_____
Mayor Taylor	_____

City of Opa-locka
Agenda Cover Memo

Department Manager:	Adelina Gross			**Department Manager Signature:**			
Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**			
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**
				X			
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		**X**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact section below		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**
							X
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**				
	X						
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:** **Enhance Organizational** ☐ **Bus. & Economic Dev** ☐ **Public Safety** ■ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*		
	X						
Sponsor Name	Interim City Manager		**Department:** Capital Improvement Program		City Manager		

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK THE SOURCEWELL PROFESSIONAL SERVICE AGREEMENT WITH THE SHIFF CONSTRUCTION FOR THE REPLACEMENT OF LIFT STATIONS 9.

Staff Summary:

City Administration is seeking approval from the City Commission to piggyback the Sourcewell Professional Services Agreement with Shiff Construction, Inc. and accept the proposal from Shiff Construction, Inc, for the replacement of Lift Stations 9 in an amount of $1,149,639.93.

-

The project involves providing all necessary materials, labor, and equipment to replace Sewage Lift Stations No. 9 . This includes, but is not limited to:

- Excavation, demolition, and modification work
- Abandoning the existing dry well
- Removing the dry well chimney
- Removing existing pumps, valves, piping, fittings, emergency discharge connections, sewer clean-out plugs, concrete slabs, and the top slab of the wet well
- Removing and replacing in-kind the existing 6-foot chain link fence
- Removing and relocating, as needed, the existing water meter and connecting it to the service line; relocating the existing RTU antenna, electrical box, and concrete slab for electrical service; and relocating the existing backflow preventer unit and water faucet, as well as the existing plug valve
- Providing, installing, operating, and removing temporary sewage effluent bypass pumps, equipment, and accessories
- Installing a new concrete top slab for the wet well and valve vault structure
- Installing aluminum access hatches for the wet well, valve vault, and emergency connection
- Applying a protective coating for the wet well
- Installing two 2.68 HP submersible pumps and related equipment
- Installing a bubbler control system and associated equipment
- Providing and installing a new meter and main disconnect
- Implementing the proposed power/control system, including the necessary electrical panel, enclosure, telemetry system, and related equipment
- Installing electrical conduits and junction boxes
- Installing the RTU panel and SCADA equipment provided by the Department
- Performing electrical and mechanical work
- Supplying all materials, equipment, and supplies needed for the pump station startup and testing
- Installing sewage force main pipe and fittings, and connecting to the existing sewage force main
- Replacing any sod, sidewalk, or pavement damaged during construction
- Conducting site restoration and addressing any other appurtenant and miscellaneous items for a complete, satisfactory, and functional installation.

Therefore, Staff is requesting approval from the City Commission to authorize the Interim City Manager to piggyback the Sourcewell Professional Services Agreement with Shiff Construction for Professional Services Agreement and accept the proposal from Shiff Construction for the Lift Stations 9 Replacement.

Financial Impact Pumpstation #9: The total cost for Pump Station #9 is $1,149,640. Of this amount, $700,000 has been allocated from ARPA funds under account 86-535635. ARPA Funding will be reprioritized through Budget Amendment #1 along with the remaining balance of ($449,640) to address the budget difference. As a Capital Improvement Project, this expenditure will not have a long-term ongoing impact on any Fund.

Proposed Action:

Staff recommends the City Commission authorize the Interim City Manager to piggyback the Sourcewell Professional Services Agreement with Shiff Construction, Inc. and accept the proposal for the Lift Station 9 Replacement.

Attachment:

1. Agenda
2. Proposal provided by Shiff Construction
3. Sourcewell Professional Services Agreement
4. Lift Station 9 Plans and Specifications

CITY OF OPA-LOCKA AGREEMENT FOR LIFT STATION 9 REPLACEMENT SERVICES

(General Construction Services Piggyback Competitive Award)

This Agreement is made this ____ day of _____, 2024, between the City of Opa-Locka, a municipal corporation organized and existing under the laws of the State of Florida and whose address is 780 Fisherman Street, Opa-Locka, Florida 33054 (the **"City"),** and Shiff Construction & Development, Inc. whose address is 180 SW 6th St Pompano Beach, FL 33060 (the **"Contractor").**

WITNESSETH

WHEREAS, the Contractor desires to enter into this Agreement ("Agreement") with City to provide Lift Station 9 Replacement Services (the "Project"); and

WHEREAS, the parties desire to incorporate the terms and conditions of the solicitation and contractual arrangement between Sourcewell and the Contractor, as set forth in the Sourcewell Invitation for Bid (IFB) 111821 ("the IFB"); and

WHEREAS, the City Code provides authority for the City to select and contract through the use of the competitive bid process of another government entity as an exception to the otherwise required formal bidding process.

NOW THEREFORE, in consideration of the mutual covenants set forth in this Agreement, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

Section 1. Term. The term of this Agreement commences upon fully execution of this agreement and continues through December 28, 2024, unless terminated earlier by its terms.

Section 2. Contract Terms. The Contractor agrees to provide the City with Lift Station 9 Replacement Services in accordance with the City's requirements as set forth herein and the Standard Contract between Sourcewell and the Contractor dated on or about January 3, 2022 (the "Sourcewell Agreement"), attached hereto and incorporated herein as Exhibit "A". The exhibits are incorporated into this Agreement for all purposes, and are collectively referred to as the "Contract Documents", and represent the entire agreement between the parties. In the event of conflict between or among the Contract Documents, the order of priority shall be: this Agreement, the Sourcewell Agreement and the Contractor's accepted proposal.

Section 3. Scope of Work

The following provisions are included:

A. City shall pay Contractor no more than the unit prices set forth in the Contract Documents and in accordance with the provisions of the Contract Documents. If the City requires services not covered by unit prices already made a part of the Contract Documents, the Contractor shall submit a detailed written proposal to the authorized City representative before providing any such services. For these purposes, Adelina Gross, as Capital Improvement Programs Manager, shall be the City Representative and may be reached at 305-953-2868 Ext 3001.

B. If permits are required, Contractor shall submit complete and accurate permit applications to all applicable permitting agencies within ten work days of receiving from the City all documents necessary to file such permit applications. The City shall pay all permit and related fees directly to the permitting agencies, including any permit fees charged by the City.

C. The City of Opa-Locka shall be substituted for the Sourcewell with regard to any and all provisions of the Sourcewell Agreement, the IFB, and the Contractor's bid, including by example and not limitation, with regard to bond requirements, insurance, indemnification, licensing, termination, default and ownership of documents. All recitals, representations, and warranties of Contractor made in those documents are restated as if set forth fully herein,made for the benefit of the City, and incorporated herein.

D. Contractor shall not commence work on the Project unless and until the requirements for insurance have been fully met by Contractor and appropriate evidence thereof, in the City's sole discretion, has been provided to and approved by the City.

Section 4. Assignment. Neither party may assign its rights or obligations under this Agreement without the consent of the other.

Section 5. Notice. Notice hereunder shall be provided in writing by certified mail, return receipt requested, or customarily used overnight transmission with proof of delivery, to the following parties, with mandatory copies, as provided below:

For City: Darvin Williams, City Manager
City of Opa-Locka
780 Fisherman Street
Opa-Locka, Florida, Florida 33054

Copy To: Burnadette Norris-Weeks, Esq.
City Attorney
Burnadette Norris-Weeks, P.A.
401 NW 7th Avenue
Fort Lauderdale, Florida 33311

For Contractor: Justen Schiff
Shiff Construction & Development, Inc.
180 SW 6th St
Pompano Beach, FL 33060

Copy To: Rod Feiner
1404 South Andrews Avenue
Fort Lauderdale, Fl 33316

Section 5. Severability. This Agreement sets forth the entire agreement between Contractor and City with respect to the subject matter of this Agreement. This Agreement supersedes all prior and contemporaneous negotiations, understandings and agreements, written or oral, between the parties. This Agreement may not be modified except by the parties' mutual agreement set forth in writing and signed by the parties.

Section 6. E-verify. In accordance with Florida Statutes §448.095, the Contractor, prior to commencement of services or payment by the City, will provide to

the City proof of participation/ enrollment in the EVerify system of the Department of Homeland Security. Evidence of participation/enrollment will be a printout of the Company's "Company Profile" page from the Everify system. Failure to be continually enrolled and participating in the E-Verify program will be a breach of contract which will be grounds for immediate termination of the contract by the City. The Consultant will not hire any employee who has not been vetted through E-Verify. The Contractor may not subcontract any work for the City to any subcontractor that has not provided an affidavit stating that the subcontractor does not employ, contract with or subcontract with an unauthorized alien.

IF CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (305) 953-2800, email: jflores@Opalockafl.gov OR BY MAIL: City of Opa-locka – City Clerk's Office, 780 Fisherman Street, Opa-Locka, FL 33054

IN WITNESS WHEREOF, the parties hereto have accepted, made and executed this Agreement upon the terms and conditions above stated on the day and year first above written.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

CITY: City of Opa-Locka By:_____
_____

Sha’mecca Lawson, Interim City Manager

Date:_____

APPROVED AS TO FORM AND
LEGAL SUFFICIENCYFOR THE USE
OF AND RELIANCE
BY THE CITY OF OPA-LOCKA ONLY:

By:_____
City Attorney
Burnadette Norris-Weeks, P.A.

By:_____
Joanna Flores, City Clerk

CONTRACTOR:
Shiff Construction & Development, Inc.

By: _____ Witness:_____

_____ _____
PRINT NAME

Date:_____

_____
TITLE

Date:_____

Work Order Signature Document

EZIQC Contract No.: FL-R10-GC02-111821- SCD

[X] **New Work Order** [ ] **Modify an Existing Work Order**

Work Order Number.: 133497.00 Work Order Date: 10/11/2024

Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Owner Name:	City of Opa Locka	Contractor Name:	Shiff Construction & Development, Inc.
Contact:	Adelina Gross	Contact:	Justen Shiff
Phone:	7729329572	Phone:	9545242575

Work to be Performed

Work to be performed as per the Final Detailed Scope of Work Attached and as per the terms and conditions of EZIQC Contract No FL-R10-GC02-111821- SCD.

Brief Work Order Description:

Time of Performance Estimated Start Date:

Estimated Completion Date:

Liquidated Damages Will apply: [ ] Will not apply: [X]

Work Order Firm Fixed Price: $1,149,639.93

Owner Purchase Order Number:

Approvals

Owner Date

Contractor Date

Detailed Scope of Work

To: Justen Shiff
Shiff Construction & Development, Inc.
1350 NE 56th St -Ste. 100
Fort Lauderdale, FL 33334
9545242575

From: Adelina Gross
City of Opa Locka
780 Fisherman Street
Opa-Locka, FL 33054
7729329572

Date Printed: October 11, 2024

Work Order Number: 133497.00

Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Brief Scope:

☐ **Preliminary** ☐ **Revised** ☒ **Final**

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

Per attached scope of work.

Subject to the terms and conditions of JOC Contract **FL-R10-GC02-111821- SCD**.

Contractor _____ Date _____

Owner _____ Date _____

Contractor's Price Proposal - Summary

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	133497.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #9 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$1,149,639.93

Lift Station #9	**$1,149,639.93**

Proposal Total	**$1,149,639.93**

Thisl total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: %

Contractor's Price Proposal - Detail

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	133497.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #9 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$1,149,639.93

	Sect.	Item	Mod.	UOM	Description	Line Total
Labor	Equip.	Material	(Excludes)			
Lift Station #9						
1	01 22 16	00 0002		EA	Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.	$26,400.00
					Quantity x Unit Price x Factor = Total	
				Installation	24,000.00 x 1.00 x 1.1000 = 26,400.00	
					Allowance for permit fees. Actual will be billed at cost plus 1%.	
2	01 22 16	00 0002		EA	Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.	$51,940.00
					Quantity x Unit Price x Factor = Total	
				Installation	49,000.00 x 1.00 x 1.0600 = 51,940.00	
					Mobilization Fees	
3	01 22 16	00 0002		EA	Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.	$24,747.62
					Quantity x Unit Price x Factor = Total	
				Installation	22,497.84 x 1.00 x 1.1000 = 24,747.62	
					2% Payment and Performance Bond Fee on $1,124,829.31	
4	01 22 20	00 0010		HR	ElectricianFor tasks not included in the Construction Task Catalog® and as directed by owner only.	$16,681.01
					Quantity x Unit Price x Factor = Total	
				Installation	240.00 x 65.57 x 1.0600 = 16,681.01	
					(3) men (8) hours a day for (10) days to safely remove all electrical prior to demolition, as well as to tie in power to new lift station pumps.	
5	01 22 20	00 0015		HR	LaborerFor tasks not included in the Construction Task Catalog® and as directed by owner only.	$22,483.87
					Quantity x Unit Price x Factor = Total	
				Installation	480.00 x 44.19 x 1.0600 = 22,483.87	
					Line item being used to setup dewatering as its extremely labor intensive.(5) guys (8) hours per day for (12) days.	
6	01 22 20	00 0015		HR	LaborerFor tasks not included in the Construction Task Catalog® and as directed by owner only.	$7,869.36
					Quantity x Unit Price x Factor = Total	
				Installation	168.00 x 44.19 x 1.0600 = 7,869.36	
					(3) men (8) hours a day to assist with demolition for (7) days	

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

7	01 22 20 00 0047		HR	Senior Surveyor (Party Chief)									$5,542.10
			Installation		Quantity 120.00	x	Unit Price 43.57	x	Factor 1.0600	=	Total 5,542.10		
			As-builts										
8	01 22 20 00 0048		HR	Surveyor (Instrument person)									$4,700.04
			Installation		Quantity 120.00	x	Unit Price 36.95	x	Factor 1.0600	=	Total 4,700.04		
			Surveying for lift station										
9	01 22 20 00 0049		HR	Surveyor (Rod Person)									$3,347.90
			Installation		Quantity 120.00	x	Unit Price 26.32	x	Factor 1.0600	=	Total 3,347.90		
			Surveying for lift station										
10	01 22 20 00 0066		HR	Flagperson For Traffic Control									$12,178.76
			Installation		Quantity 260.00	x	Unit Price 44.19	x	Factor 1.0600	=	Total 12,178.76		
			MOT during construction.										
11	01 22 23 00 0291		MO	2,500 To 2,700 LB Capacity, 78" Wide, Tracked Skid-Steer Loader With Full-Time Operator									$39,830.01
			Installation		Quantity 3.00	x	Unit Price 12,525.16	x	Factor 1.0600	=	Total 39,830.01		
			Secondary small compact loader, clean up, sweeping, moving minor, small construction materials										
12	01 22 23 00 0291	0065		For Equipment Without Operator, Deduct									-$13,209.85
			Installation		Quantity 1.50	x	Unit Price -8,308.08	x	Factor 1.0600	=	Total -13,209.85		
13	01 22 23 00 0359		MO	7/8 To 1 CY Hydraulic Excavator With Full-Time Operator									$54,962.29
			Installation		Quantity 3.00	x	Unit Price 17,283.74	x	Factor 1.0600	=	Total 54,962.29		
			Secondary Excavator for gravity sewer, lift station, vault assembly, pump and pipe assemblies										
14	01 22 23 00 0359	0065		For Equipment Without Operator, Deduct									-$15,441.29
			Installation		Quantity 1.50	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -15,441.29		
15	01 22 23 00 0371		MO	2 To 2-3/8 CY Hydraulic Excavator With Full-Time Operator									$79,968.16
			Installation		Quantity 3.00	x	Unit Price 25,147.22	x	Factor 1.0600	=	Total 79,968.16		
			Massive 110,000-thousand-pound Main excavator, digging lift station, handling all sheeting and or shoring, setting big structure.										
16	01 22 23 00 0371	0065		For Equipment Without Operator, Deduct									-$15,441.29
			Installation		Quantity 1.50	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -15,441.29		
17	01 22 23 00 0430		MO	1/2 To 5/8 CY, 65 HP, Loader-Backhoe With Standard Bucket And Full-Time Operator									$37,419.95
			Installation		Quantity 3.00	x	Unit Price 11,767.28	x	Factor 1.0600	=	Total 37,419.95		
			Main line loader moving pumps, excavated dirt, loading trucks, moving everyday construction materials										
18	01 22 23 00 0430	0065		For Equipment Without Operator, Deduct									-$15,441.29
			Installation		Quantity 1.50	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -15,441.29		

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

19	01 22 23 00 0551		MO	4' Maximum Trench Depth, Ride-On Trencher With Full-Time Operator									$35,374.89
					Quantity		Unit Price		Factor	=	Total		
				Installation	3.00	x	11,124.18	x	1.0600	=	35,374.89		
				Trench box to be used within sheet piling, for 24' depth excavation.									
20	01 22 23 00 0551	0030		For Equipment Without Operator, Deduct									-$13,209.85
					Quantity		Unit Price		Factor	=	Total		
				Installation	1.50	x	-8,308.08	x	1.0600	=	-13,209.85		
21	01 22 23 00 0916		MO	500 Gallon High Volume Vacuum With Full-Time Operator									$89,807.27
					Quantity		Unit Price		Factor	=	Total		
				Installation	6.00	x	14,120.64	x	1.0600	=	89,807.27		
				(2) dewatering vacuum pumps: (1) 10" & (1) 2" for 3 months each.									
22	01 22 23 00 0916	0028		For Equipment Without Operator, Deduct									-$26,419.69
					Quantity		Unit Price		Factor	=	Total		
				Installation	3.00	x	-8,308.08	x	1.0600	=	-26,419.69		
23	01 22 23 00 1134		MO	35,000 GPH, 4" Discharge, 106' Maximum Head, Gas Powered Portable Trash Pump									$3,644.82
					Quantity		Unit Price		Factor	=	Total		
				Installation	3.00	x	1,146.17	x	1.0600	=	3,644.82		
				(1) 4" dewatering trash pump.									
24	01 22 23 00 1160		MO	510,000 GPH, 12" Discharge, 200' Maximum Head, Diesel Powered Portable Silenced Environmental Trash Pump									$41,420.45
					Quantity		Unit Price		Factor	=	Total		
				Installation	6.00	x	6,512.65	x	1.0600	=	41,420.45		
				(2) Bypass Pumps for 3 months.									
25	01 22 23 00 1441		MO	13 CY Rear Dump Truck With Full-Time Truck Driver									$60,397.64
					Quantity		Unit Price		Factor	=	Total		
				Installation	3.00	x	18,992.97	x	1.0600	=	60,397.64		
				Dump trucks for hauling all construction debris out, as well as bringing any necessary materials to the site.									
26	01 22 23 00 1441	0039		For Equipment Without Operator, Deduct									-$16,741.98
					Quantity		Unit Price		Factor	=	Total		
				Installation	1.50	x	-10,529.55	x	1.0600	=	-16,741.98		
27	01 56 23 00 0003		LF	Up To One Month Rental, FDOT Type K Barricade Rental, Per LFRental cost per linear foot for 1st month only. Includes initial transport to job, unloading, placement, pinning, unpinning, loading, and final transport to back to yard. Excludes mobilization charge for crew and equipment.									$53,360.40
					Quantity		Unit Price		Factor	=	Total		
				Installation	1,200.00	x	41.95	x	1.0600	=	53,360.40		
				600 LF per month for 2 months.									
28	01 56 23 00 0006		EA	Mobilization Of FDOT Type K BarricadesMobilization charge for crew and equipment for each trip to either install, remove or relocate temporary precast concrete K-Wall Barriers to, from, or on the job site.									$1,058.78
					Quantity		Unit Price		Factor	=	Total		
				Installation	1.00	x	998.85	x	1.0600	=	1,058.78		
				Mobilization of barricades for MOT									
29	01 56 26 00 0005		LF	Temporary 6' High Chain Link Fence And Posts, Up To 6 Months									$3,548.88
					Quantity		Unit Price		Factor	=	Total		
				Installation	600.00	x	5.58	x	1.0600	=	3,548.88		
				Temp Fence on Barricade.									
30	01 56 26 00 0005	0068		For >500, Deduct									-$343.44
					Quantity		Unit Price		Factor	=	Total		
				Installation	600.00	x	-0.54	x	1.0600	=	-343.44		

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

31	02 41 19 13 0071		EA	Saw Cut Minimum ChargeFor projects where the total saw cutting charge is less than the minimum charge, use this task exclusively. This task should not be used in conjunction with any other tasks in this section.									$809.49
			Installation		Quantity 1.00	x	Unit Price 763.67	x	Factor 1.0600	=	Total 809.49		
				Saw cut control joints in new slab									
32	03 31 13 00 0005		SF	6" 3,000 PSI Slab On Grade Concrete Slab Assembly									$985.80
			Installation		Quantity 120.00	x	Unit Price 7.75	x	Factor 1.0600	=	Total 985.80		
				Concrete slab for lift station									
33	03 31 13 00 0005	0155		For 4,500 PSI Concrete, Add									$54.70
			Installation		Quantity 120.00	x	Unit Price 0.43	x	Factor 1.0600	=	Total 54.70		
34	03 31 13 00 0005	0159		For Up To 500, Add									$314.18
			Installation		Quantity 120.00	x	Unit Price 2.47	x	Factor 1.0600	=	Total 314.18		
35	03 35 13 00 0004		SF	Broom, Concrete Floor Finish									$90.31
			Installation		Quantity 120.00	x	Unit Price 0.71	x	Factor 1.0600	=	Total 90.31		
				broom finish new slab									
36	05 05 23 00 0885		EA	1/2" Diameter x 3-1/2" Length, 304/18-8 Stainless Steel, Hex Head Bolt									$2,626.15
			Installation		Quantity 250.00	x	Unit Price 9.91	x	Factor 1.0600	=	Total 2,626.15		
				SS Bolts									
37	05 05 23 00 0885	0191		For >100 To 250, Deduct									-$198.75
			Installation		Quantity 250.00	x	Unit Price -0.75	x	Factor 1.0600	=	Total -198.75		
38	05 05 23 00 1358		EA	1/2" Diameter, 304 Stainless Steel Hex Nut									$437.25
			Installation		Quantity 250.00	x	Unit Price 1.65	x	Factor 1.0600	=	Total 437.25		
				SS Nuts									
39	05 05 23 00 1439		EA	1/2" Inside Diameter, 304/18-8 Stainless Steel Flat Washer									$347.15
			Installation		Quantity 250.00	x	Unit Price 1.31	x	Factor 1.0600	=	Total 347.15		
				SS Washers									
40	05 12 23 00 0090		TON	Structural Shapes, Steel Plate A36 Structural SteelUp to 21.5 LB per SF									$54,795.72
			Installation		Quantity 6.00	x	Unit Price 8,615.68	x	Factor 1.0600	=	Total 54,795.72		
				(4) 8' x 12' Steel Plates									
41	09 97 63 00 0051		SF	Thortex Chemi Tech USR Chemical Protection System (One Coat 20 Mil Average)									$24,454.20
			Installation		Quantity 750.00	x	Unit Price 30.76	x	Factor 1.0600	=	Total 24,454.20		
				660 SF interior coating on wet wells.									
42	10 32 19 00 0003		EA	Stainless Steel Screen And FrameFits Heights between 18" to 27" and widths up to 42".									$280.44
			Installation		Quantity 1.00	x	Unit Price 264.57	x	Factor 1.0600	=	Total 280.44		
				12x12 SS Screen									

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

43	13 34 23 16 0002	EA	Parking Booth For Attendant									$2,016.88
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	1,902.72	x	1.0600	=	2,016.88		
			Using this line item for 16x16x46 Guard shack as there is no item in the CTC.									
44	22 05 23 00 0028	EA	2" Diameter, 200 PSI, Non-Rising Stem, Crimped Bronze Gate Valve									$435.27
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	410.63	x	1.0600	=	435.27		
			Gate Valve									
45	22 05 23 00 0070	EA	2" Crimped Bronze, 200 PSI, In-Line Check Valve									$307.85
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	145.21	x	1.0600	=	307.85		
			Check Valves									
46	22 11 16 00 1262	LF	3/4" Cross-Linked Polyethylene (PEX , XPE or XLPE) Tubing									$684.76
				Quantity		Unit Price		Factor	=	Total		
			Installation	100.00	x	6.46	x	1.0600	=	684.76		
			3/4" Blue Polly									
47	22 11 16 00 1263	LF	1" Cross-Linked Polyethylene (PEX , XPE or XLPE) Tubing									$1,358.71
				Quantity		Unit Price		Factor	=	Total		
			Installation	130.00	x	9.86	x	1.0600	=	1,358.71		
			1" Blue Polly									
48	22 11 19 00 0020	EA	2" Inside Diameter, 20' Rubber Discharge Hose									$10,925.84
				Quantity		Unit Price		Factor	=	Total		
			Installation	15.00	x	687.16	x	1.0600	=	10,925.84		
			Discharge hoses									
49	22 11 19 00 0081	EA	3/4" Anti Siphon Pressure Type Vacuum Breaker									$288.60
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	272.26	x	1.0600	=	288.60		
			3/4" Vacuum Breaker									
50	22 11 23 13 0002	EA	1 HP Simplex Domestic Water Packaged Booster Pump And Tank									$171.52
				Quantity		Unit Price		Factor	=	Total		
			Installation	0.00	x	16,014.75	x	1.0600	=	0.00		
			Demolition	1.00	x	161.81	x	1.0600	=	171.52		
			Using this line item for 3"" Trash Pump as there is no item in the CTC.									
51	22 13 16 00 0524	LF	1-1/2" Schedule 40 Polyvinyl Chloride (PVC) DWV Pipe									$1,116.18
				Quantity		Unit Price		Factor	=	Total		
			Installation	150.00	x	7.02	x	1.0600	=	1,116.18		
			1.5" Sch 40 Pipe									
52	22 13 29 13 0040	EA	48" Steel Sump Covers, Square Or Round									$4,978.40
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	2,348.30	x	1.0600	=	4,978.40		
			Covers for wet well and valve vault.									
53	22 13 33 00 0077	EA	20 To 23 HP, 3" To 4" Discharge, Dry Pit Submersible Vertical Non-Explosion Proof Pump With Shielded Power Cable (Flygt NT3153)FLS and 50' electrical cable									$107,106.96
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	50,198.52	x	1.0600	=	106,420.86		
			Demolition	2.00	x	323.63	x	1.0600	=	686.10		
			Submersible pumps for wet well.									

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

54	22 51 23 00 0200		EA	8" Pipe, Polyvinyl Chloride (PVC) Saddle Clamp For Flow Transducers (Signet PV8S080)									$721.03
			Installation		Quantity 1.00	x	Unit Price 680.22	x	Factor 1.0600	=	Total 721.03		
				8" Pipe Saddle									
55	23 05 19 00 0046		EA	2-1/2" Diameter Liquid Filled, Polypropylene Case, 0 To 100" H2O (Very Low PSI), Stainless Steel Internals And Stem, Pressure Gauge									$404.94
			Installation		Quantity 3.00	x	Unit Price 127.34	x	Factor 1.0600	=	Total 404.94		
				Gauges									
56	23 05 23 00 0285		EA	1" Threaded, Stainless Steel Body, Three Piece Ball Valve									$2,540.14
			Installation		Quantity 4.00	x	Unit Price 599.09	x	Factor 1.0600	=	Total 2,540.14		
				1" Stainless Steel Ball Valve									
57	23 05 29 00 1076		EA	4" Pipe Stanchion Support With U-Bolt (Cooper B-Line B3090)									$3,251.02
			Installation		Quantity 25.00	x	Unit Price 122.68	x	Factor 1.0600	=	Total 3,251.02		
				Pipe supports									
58	23 09 23 11 0031		EA	3/4" 2-Way Brass Ball Valve With Actuator (Belimo B220B+LRB24-3)									$555.10
			Installation		Quantity 2.00	x	Unit Price 261.84	x	Factor 1.0600	=	Total 555.10		
				3/4" Ball Valve									
59	31 08 13 00 0002		EA	Pile Load Test, 50 To 100 Ton Design Load									$38,332.97
			Installation		Quantity 1.00	x	Unit Price 36,163.18	x	Factor 1.0600	=	Total 38,332.97		
				Testing for sheet piling									
60	31 08 13 00 0002	0096		For Testing In Wet/Soft Soil Condition, Add									$11,499.89
			Installation		Quantity 1.00	x	Unit Price 10,848.95	x	Factor 1.0600	=	Total 11,499.89		
61	31 41 16 13 0004		TON	Driven Steel Sheet Piling, 25' Excavation, 38 PSF Steel Sheeting, Pull And Salvage									$59,976.40
			Installation		Quantity 31.00	x	Unit Price 1,825.21	x	Factor 1.0600	=	Total 59,976.40		
				Sheet piling required 15' x 15' x 24' deep excavation.									
62	32 11 29 13 0003		SY	8" Thick FDOT Limerock									$3,997.79
			Installation		Quantity 50.00	x	Unit Price 75.43	x	Factor 1.0600	=	Total 3,997.79		
				Limerock for asphalt repair									
63	32 11 29 13 0003	0008		For Up To 500, Add									$846.41
			Installation		Quantity 50.00	x	Unit Price 15.97	x	Factor 1.0600	=	Total 846.41		
64	32 12 16 13 0075		TON	Superpave Leveling Course, SP-12.5									$5,169.36
			Installation		Quantity 25.00	x	Unit Price 195.07	x	Factor 1.0600	=	Total 5,169.36		
				Asphalt repair									
65	32 92 23 00 0039		MSF	>1,000 To 4,000 SF, St. Augustine Sod, Installed On Level Ground									$4,583.19
			Installation		Quantity 4.00	x	Unit Price 1,080.94	x	Factor 1.0600	=	Total 4,583.19		
				Sod restoration									

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

66	33 05 61 00 0039		EA	8' Deep, 8' Diameter, Precast Concrete Manhole									$77,039.00
			Installation		Quantity 3.00	x	Unit Price 24,226.10	x	Factor 1.0600	=	Total 77,039.00		
			24' deep Lift Station Structure.										
67	33 05 61 00 0039	0407		For Bitumastic Coating, Add									$1,995.55
			Installation		Quantity 3.00	x	Unit Price 627.53	x	Factor 1.0600	=	Total 1,995.55		
68	33 05 61 00 0039	0411		For Epoxy Coating, Add									$4,133.75
			Installation		Quantity 3.00	x	Unit Price 1,299.92	x	Factor 1.0600	=	Total 4,133.75		
69	33 05 63 00 0029		EA	8' x 8' x 7' Precast Concrete Underground Utility Vault6" thick walls and 8" thick top.									$8,211.19
			Installation		Quantity 1.00	x	Unit Price 7,746.41	x	Factor 1.0600	=	Total 8,211.19		
			Vault structure										
70	33 14 13 13 0005		LF	4", Class 50, Mechanical Joint Ductile Iron Pipe									$4,144.60
			Installation		Quantity 100.00	x	Unit Price 39.10	x	Factor 1.0600	=	Total 4,144.60		
			4" DIP										
71	33 14 13 13 0021		EA	4" Mechanical Joint Ductile Iron 90 Degree Elbow									$1,156.06
			Installation		Quantity 6.00	x	Unit Price 181.77	x	Factor 1.0600	=	Total 1,156.06		
			4" 90s										
72	33 14 13 13 0037		EA	4" Mechanical Joint Ductile Iron 45 Degree Elbow									$2,495.19
			Installation		Quantity 15.00	x	Unit Price 156.93	x	Factor 1.0600	=	Total 2,495.19		
			4" 45's										
73	33 14 13 13 0402		EA	6" x 4" Mechanical Joint x Mechanical Joint Ductile Iron Reducer									$1,938.21
			Installation		Quantity 10.00	x	Unit Price 182.85	x	Factor 1.0600	=	Total 1,938.21		
			6"x4" Reducer										
74	33 14 13 13 0491		EA	4" Mechanical Joint x Flanged End (MJxFE) Ductile Iron Adapters									$2,294.35
			Installation		Quantity 8.00	x	Unit Price 270.56	x	Factor 1.0600	=	Total 2,294.35		
			4" Flange Adapters										
75	33 14 13 13 0524		EA	4" Mechanical Joint Gland, Gasket, T-Head Bolts And NutsIncludes four (4) 3/4" diameter plain finish Boltss with nut.									$1,447.94
			Installation		Quantity 22.00	x	Unit Price 62.09	x	Factor 1.0600	=	Total 1,447.94		
			4" Gland pack										
76	33 14 13 13 0525		EA	6" Mechanical Joint Gland, Gasket, T-Head Bolts And NutsIncludes six (6) 3/4" diameter plain finish Boltss with nut.									$1,192.98
			Installation		Quantity 15.00	x	Unit Price 75.03	x	Factor 1.0600	=	Total 1,192.98		
			6" Gland pack										
77	33 14 13 13 0568		EA	4" Mechanical Joint Restraints For Ductile Iron Pipe (MEGALUG® 1104DEC)									$4,132.30
			Installation		Quantity 22.00	x	Unit Price 177.20	x	Factor 1.0600	=	Total 4,132.30		
			4" Megalug's										

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

78	33 14 13 13 0569	EA	6" Mechanical Joint Restraints For Ductile Iron Pipe (MEGALUG® 1106DEC)									$2,332.11
				Quantity		Unit Price		Factor		Total		
			Installation	10.00	x	220.01	x	1.0600	=	2,332.11		
			6" Megalug's									
79	33 14 13 13 0684	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint x Plain End (MJxPE) Ductile Iron 90 Degree Elbow									$12,114.53
				Quantity		Unit Price		Factor		Total		
			Installation	20.00	x	571.44	x	1.0600	=	12,114.53		
			4" Flange P401 Lined									
80	33 14 13 13 1077	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint x Flanged End (MJxFE) Ductile Iron Adapters									$9,798.85
				Quantity		Unit Price		Factor		Total		
			Installation	15.00	x	616.28	x	1.0600	=	9,798.85		
			4" Flange P401 Lined									
81	33 14 13 13 1093	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint Ductile Iron Long Sleeves									$7,474.65
				Quantity		Unit Price		Factor		Total		
			Installation	12.00	x	587.63	x	1.0600	=	7,474.65		
			4" Sleeve P401 Lined									
82	33 14 13 13 1147	EA	4" Tee, Push-On Joint Ductile Iron									$2,968.98
				Quantity		Unit Price		Factor		Total		
			Installation	12.00	x	233.41	x	1.0600	=	2,968.98		
			4" Tee									
83	33 14 13 23 0012	LF	8" Class 200, SDR 21 Polyvinyl Chloride (PVC) Pressure Pipe									$1,374.78
				Quantity		Unit Price		Factor		Total		
			Installation	28.00	x	46.32	x	1.0600	=	1,374.78		
			New 8" SDR 26 Pipe									
84	33 14 13 23 0186	LF	6" AWWA C900, DR 14, PC 305 Polyvinyl Chloride (PVC) Pipe									$6,605.92
				Quantity		Unit Price		Factor		Total		
			Installation	400.00	x	15.58	x	1.0600	=	6,605.92		
			6" PVC C900									
85	33 14 13 39 0052	EA	1-1/2" x 1" Brass Compression Reducer Coupling									$634.09
				Quantity		Unit Price		Factor		Total		
			Installation	10.00	x	59.82	x	1.0600	=	634.09		
			Brass bushings									
86	33 14 13 53 0002	EA	4" Diameter x 1/2", 3/4" Or 1" Tap Double Stud Stainless Steel Service Saddle (Smith-Blair 372)									$805.30
				Quantity		Unit Price		Factor		Total		
			Installation	4.00	x	189.93	x	1.0600	=	805.30		
			4"x1" Saddle									
87	33 14 13 53 0224	EA	4" Ductile Iron Body, Flanged Coupling Adapter (Smith-Blair 912)									$1,601.87
				Quantity		Unit Price		Factor		Total		
			Installation	4.00	x	377.80	x	1.0600	=	1,601.87		
			Flange Camlock Assembly									
88	33 14 13 53 0224	EA	4" Ductile Iron Body, Flanged Coupling Adapter (Smith-Blair 912)									$6,007.02
				Quantity		Unit Price		Factor		Total		
			Installation	15.00	x	377.80	x	1.0600	=	6,007.02		
			4" Flanged 90s									

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

89	33 14 13 53 0257	EA	4" Ductile Iron Body, Omni Coupling System (Smith-Blair 441)										$1,023.20
		Installation	Quantity 4.00	x	Unit Price 241.32	x	Factor 1.0600	=	Total 1,023.20				
		Flange Camlock Assembly											
90	33 14 19 00 0010	EA	1" Threaded, Class 150, Bronze Angle Valve										$508.10
		Installation	Quantity 3.00	x	Unit Price 159.78	x	Factor 1.0600	=	Total 508.10				
		Angle Ball Meter Valve											
91	33 14 19 00 0017	EA	3/4" Threaded Ball Meter Valve (Mueller B-20200)										$367.26
		Installation	Quantity 3.00	x	Unit Price 115.49	x	Factor 1.0600	=	Total 367.26				
		Ball Meter Valve											
92	33 14 19 00 0108	EA	4" Flanged, Swing Type Gravity Operated Check Valve										$2,792.57
		Installation	Quantity 2.00	x	Unit Price 1,317.25	x	Factor 1.0600	=	Total 2,792.57				
		4" Check Valve											
93	33 14 19 00 0137	EA	1" Ball Corporation Valve (Mueller B-25000)										$481.07
		Installation	Quantity 6.00	x	Unit Price 75.64	x	Factor 1.0600	=	Total 481.07				
		1" Ball Corp											
94	33 14 19 00 0197	EA	4" Resilient Wedge Gate Valve, Mechanical Joint										$5,440.93
		Installation	Quantity 5.00	x	Unit Price 1,026.59	x	Factor 1.0600	=	Total 5,440.93				
		4" plug valves											
95	33 14 23 00 0047	EA	24-1/2" x 36" Precast Concrete Utility Box										$1,641.74
		Installation	Quantity 3.00	x	Unit Price 516.27	x	Factor 1.0600	=	Total 1,641.74				
		Valve boxes											
96	33 14 23 00 0048	EA	Reinforced Concrete Lid For 24-1/2" x 36" Utility Box										$1,596.42
		Installation	Quantity 3.00	x	Unit Price 502.02	x	Factor 1.0600	=	Total 1,596.42				
		Lids for Valve boxes											
97	33 31 11 00 0020	LF	2" Schedule 40 Polyvinyl Chloride (PVC) Sewer And Drain Pipe										$19,694.80
		Installation	Quantity 2,000.00	x	Unit Price 9.29	x	Factor 1.0600	=	Total 19,694.80				
		Header suction piping											
98	33 32 16 00 0049	EA	Monoflo TR Muncher Control Panel (MF-511)										$9,664.00
		Installation	Quantity 1.00	x	Unit Price 9,116.98	x	Factor 1.0600	=	Total 9,664.00				
		New control panel for lift station											
99	46 82 83 00 0194	EA	Spectra Transducer, NEMA 4X. Mounting Gear Excluded, Corrosive Resistant. Model: Controlotron #191-N-SC										$2,629.09
		Installation	Quantity 1.00	x	Unit Price 2,480.27	x	Factor 1.0600	=	Total 2,629.09				
		Transducer for wet wells.											
100	46 82 83 00 1548	Day	Commissioning (Sierra 207i Commissioning)										$32,951.16
		Installation	Quantity 10.00	x	Unit Price 3,108.60	x	Factor 1.0600	=	Total 32,951.16				
		Startup & Commissioning of lift station											

Work Order Number: 133497.00
Work Order Title: City of Opa-Locka - Lift Station #9 Replacement Project

Lift Station #9

101	46 82 83 00 2775	EA	Dual Float High And Caution Level Oil/Water Interface Bright Eye Sensor (Omntec BX-OWI-2)							$2,249.00
		Installation		Quantity 2.00	x	Unit Price 1,060.85	x	Factor 1.0600	=	Total 2,249.00
			High & low float switches in wet wells.							

Subtotal for Lift Station #9 **$1,149,639.93**

Proposal Total **$1,149,639.93**

This total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: **%**

Subcontractor Listing

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	133497.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #9 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$1,149,639.93

Name of Contractor	Duties	Amount	%
No Subcontractors have been selected for this Work Order		$0.00	0.00

SHIFF
CONSTRUCTION + DEVELOPMENT
180 SW 6th Street
Pompano Beach, Florida 33060
t: (954) 524 2575 f: (954) 524 2576
CGC1509764 www.shiff.com
construction management | development | restoration | design + build | owner representation

11 October 2024
Re: City of Opa Locka 133497.00 Lift Station #9 Rehab Scope Of Work

1. This is a lump sum contract priced by drawings from SSN Engineering for:
   -City of Opa-Locka Lift Station #9: Sheets C-100, C-200(09/05/2022), C-201(09/05/2022), C-300(04/16/2024), C-301(09/05/2022), C-310(04/16/2024), C-311(04/16/2024), E-1(09/05/2022), E-2(09/05/2022), E-3(09/05/2022), E-4(09/05/2022)

2. Mob/Demob/Mot/Dewatering Permit/Survey/As-builts/Testing
3. Gravity Sewer Bypass, All Plugging, Balling, Pumping, Back Up Pumps On Site And Set Up 24 Hours Day During Total Construction Duration
4. Complete Demo Of Site, Including Existing Lift Station, Vault And All Pipe And Fittings
5. Complete Installation Of New Lift Station And Vault, Pumps Fittings Base Elbows, Rails, Plates, Coatings, Pumps, Conduits, Electrical Panels. Final Start Up
6. Installation Of 8" SDR 26 Gravity Sewer, From Lift Station To Existing SSMH, Including News Cores And Rebuilding Channel And Coating
7. Complete Restoration Of Site Including All Fences, Gates, Pads Sidewalks, Curbs, ADA Ramp, Road Restoration, Sod, Irrigation.

CITY OF OPA-LOCKA

LIFT STATION 9 REHABILITATION

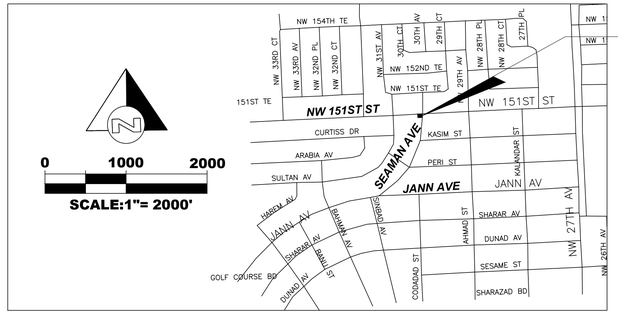
CITY COMMISSION

MAYOR: VERONICA WILLIAMS

VICE MAYOR: JOHN H TAYLOR

COMMISSIONER: DR. SHERELEAN BASS
CHRIS DAVIS
AUDREY DOMINGUEZ

INTERIM CITY MANAGER: DARVIN WILLIAM



LOCATION MAP

INDEX OF SHEETS

SHEET NO	SHEET DESCRIPTION
C-100	COVER SHEET
C-200 TO C-201	GENERAL NOTES
C-300	SANITARY SEWER PLAN AND PROFILE
C-301	SANITARY SEWER DETAILS
C-310	MECHANICAL PLAN AND PUMP DATA
C-311	STRUCTURAL PLAN AND DETAILS
E-1	ELECTRICAL GENERAL NOTES
E-2	ELECTRICAL SITE PLAN
E-3	ELECTRICAL CONTROL PANEL
E-4	MISCELLANEOUS DETAILS

SSN ENGINEERING
13899 BISCAYNE BLVD., SUITE 310
NORTH MIAMI BEACH, FL 33181
PH (305) 440-4334
WWW.SSNENGINEERING.COM
CA# 29695

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RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

NOTE:

THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

PREPARED BY: SSN ENGINEERING, LLC
ENGINEER OF RECORD: RUBEL SIDDIQUE, PE
FL PE NO.: 67239

SHEET NO.
C-100

STANDARD REQUIREMENTS FOR WATER AND SEWER CONSTRUCTION (GS 0.5-SHEET 1 OF 2)

1. ALL MATERIALS AND CONOSTRUCTION UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE MIAMI–DADE WATER AND SEWER DEPARTMENT AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS.

2. COVER OVER WATER OR SEWER FORCE MAINS SHALL BE 3'–0" MIN. UNDER RIGID PAVEMENT.

3. All MAIN LINE VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND NO. 3 OR 53 VALVE BOXES FIRE HYDRANTS AND SERVICE VALVES SHALL BE INSTALLED COMPLETE WITH 6" RISER PIPES AND NO. 2 VALVE BOXES.

4. All FORCE MAIN SERVICE CONNECTIONS INTO PRESSURE TRANSMISSION MAINS SHALL HAVE A SHUT OFF VALVE AT THE POINT OF ENTRY.

5. All GRAVITY SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPARTMENT STANDARDS.

6. FIRE HYDRANT REQUIREMENTS (NUMBER AND LOCATION) SHALL BE AS REQUIRED BY THE MIAMI–DADE COUNTY FIRE DEPARTMENT OR THE APPROPRIATE FIRE AGENCY WITH INSTALLATION IN ACCORDANCE WITH DEPARTMENT STANDARDS.

7. CONTRACTOR MUST CALL M–DWASD INSPECTION DIVISION TO ARRANGE FOR A PRE–CONSTRUCTION MEETING 2 FULL BUSINESS DAYS PRIOR TO PROPOSED START OF CONSTRUCTION. CONTACT ONE CALL CENTER 48 HRS PRIOR TO EXCAVATION.

8. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY THE DEPARTMENT.
   a. EASEMENTS, IF REQUIRED.
   b. CONTRACTOR'S WAIVER AND RELEASE OF LIEN.
   c. ABSOLUTE BILL OF SALE.
   d. i. CONTRACTOR'S LETTER OF WARRANTY (I.E., LETTER AGREEMENT). ii. DEVELOPER'S CONTRACT BOND (I.E., CONTRACT AGREEMENT).
   e. "AS–BUILT" PRINTS 24"x36" SHOWING SPECIFIC LOCATIONS, DEPTH, ETC. OF All WATER AND SEWER FACILITIES AS LOCATED BY A LICENSED FLORIDA SURVEYOR, ALONG WITH PRINTS OF "AS–BUILT WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR. (No. OF PRINTS: 3–FOR WATER, 4–FOR GRAVITY SEWER AND 5–FOR FORCE MAIN OR PUMP STATION PROJECTS). THE DEPARTMENT RESERVES THE RIGHT TO REQUIRE SUBMITTAL ON ELECTRONIC MEDIA IN ACCORDANCE WITH SEC. 01775 "MAGNETIC MEDIA SUBMITTAL".
   f. H.R.S. LETTER OF RELEASE REQUIRED FOR All WATER PROJECTS.
   g. Bill OF SALE SKETCH (8 1/2"x11") FOR WATER AND SEWER, SEPARATELY.

11. All NEW CONNECTIONS FROM EXISTING DEPARTMENT MAINS TO BE MADE BY DEPARTMENT FORCES ONLY. THE CONTRACTOR TO EXCAVATE AT REQUIRED LOCATIONS, PROVIDE AND INSTALL MATERIAL WITH FITTINGS, PRIOR TO TAP.

12. AN APPROVED PAVING AND DRAINAGE PLAN MUST BE SUBMITTED TO MDWASD FOR All NEW SUBDIVISIONS PRIOR TO APPROVAL OF WATER AND SEWER PERMIT PLANS, UPON REQUEST.

13. UNLESS OTHERWISE SPECIFIED, All TAPS 20 INCHES AND SMALLER FOR CONNECTIONS TO EXISTING MAINS Will BE DONE BY DEPARTMENT FORCES. UNDER NO CIRCUMSTANCES Will THE CONTRACTOR BE PERMITTED TO TAP EXISTING MAINS IN THE SIZE RANGE SPECIFIED ABOVE. THE TAPPING SLEEVE AND TAPPING VALVE ARE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE INSPECTOR.

"AS-BUILT" REQUIREMENTS FOR WATER AND SEWER CONSTRUCTION (GS 0.5- SHEET 2 OF 2)

1. AT THE COMPLETION OF ANY WATER AND SEWER JOB, EITHER DONATION OR CONTRACT, THE CONTRACTOR SHALL SUBMIT:

a. AS–BUILT PRINTS WHICH HAVE BEEN SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER. (QTY. OF PRINTS, AS REQUIRED BY THE DEPARTMENT.)

2. "AS–BUILT" FORMAT:

a. 24"x36" PRINTS
b. LOCATION MAP SCALE SHOULD BE 1"=300' AND SECTION –TOWNSHIP–RANGE SHOULD BE SHOWN.
c. THE WORD "AS–BUILT" IN LARGE LETTERS.
d. TITLE BLOCK WITH DEPARTMENT DS, DW OR ER NUMBER AND PERTINENT INFORMATION.
e. PREFERRED SCALE TO BE I"= 40' HORIZONTALLY AND I"= 4' VERTICALLY*.
f. STREET NOMENCLATURE.
g. SEPARATE AS–BUILTS FOR WATER AND SEWER.
h. SEPARATE WATER AND SEWER PROFILE.
i. STATIONING STARTING WITH 0+00 AT PERMANENT REFERENCE POINT (I.E., CL,SL , ETC.) OR AS SHOWN ON DESIGN PERMIT PLANS, AND TO RUN CONTINUOUSLY TO END OF MAIN.
j. EASEMENTS, IF ANY, TIED TO PERMANENT REFERENCE POINT.
k. IDENTIFY ALL CONTROL LINES (I.E. BLDG. LINE, PROPERTY LINE, R/W, ETC).
l. ALL "PROPOSED" INFORMATION TO BE REMOVED FROM PRINTS, LEAVING ONLY "AS–BUILT" INFORMATION REFLECTED IN DRAWINGS.

3. WATER "AS–BUILTS" MUST INCLUDE:

a. PLANS SHOWING PIPE SIZE, MATERIAL AND OFFSET OF MAIN, DEFLECTIONS (IF ANY), STATION OF SERVICES, HYDRANTS AND FITTINGS AT THE MAINLINE (IF PERPENDICULAR TO IT), AND AT MAIN AND END OF SERVICES IF ANY, OTHER ANGLE, AND DEFLECTION OF PIPE, IF ANY.
b. PROFILE SHOWING TOP OF GROUND AND TOP OF PIPE ELEVATIONS AT EVERY 100' STATION AND AT ANY CHANGE IN GRADE (WITH CORRESPONDING STATION), PIPE SIZE AND PIPE MATERIALS REFERENCED TO PLAN.

4. SEWER "AS–BUILTS" MUST INCLUDE:

a. PLAN SHOWING MANHOLE NUMBER, PIPE SIZE AND PIPE MATERIAL OF PIPE, DEFLECTION, IF ANY (FORCE MAIN ONLY), AND LOCATION OF LATERALS WITH REFERENCE TO MANHOLE.
b. PROFILE SHOWING MANHOLE NUMBER (AS PER PLAN), RIM AND INVERT ELEVATIONS (IF MORE THAN ONE INVERT, LABEL NORTH, SOUTH , ETC), AND STATION STARTING AT EACH 0+00 AT DOWNSTREAM MANHOLE.

5. FORCE MAIN "AS–BUILT" SAME AS WATER MAIN ABOVE.
6. EACH AS–BUILT SHALL SHOW THE FLORIDA STATE PLANE COORDINATES (CURRENT READJUSTMENT) OF ALL THE MANHOLES AND VALVES AND OF AT LEAST TWO HORIZONTAL CONTROL POINTS PROPERLY IDENTIFIED AND LOCATED WITHIN THE PROJECT. OTHER SCALE MAY BE PERMITTED, BUT MUST BE APPROVED BY THE DEPA OF DRAWINGS.

RER-DERM WATER-SEWER GENERAL NOTES

1. A horizontal distance of at least 6 feet, and preferably 10 feet (outside to outside), shall be maintained between gravity or pressure sewer pipes and water pipes. The minimum horizontal separation can be reduced to 3 feet for vacuum-type sewers or for gravity sewers where the top of the sewer pipe is at least 6 inches below the bottom of the water pipe. When the above specified horizontal distance criteria cannot be met due to an existing underground facility conflict, smaller separations are allowed if one of the following is met:
   a) The sewer pipes are designed and constructed equal to the water pipe and pressure tested at 150 psi.
   b) The sewer is encased in a watertight carrier pipe or concrete.
   c) The top of the sewer is at least 18 inches below the bottom of the water pipe.

2. A vertical distance of at least 12 inches (outside to outside) shall be maintained between any water and sewer mains with sewer pipes preferably crossing under water mains. The minimum vertical separation can be reduced to 6 inches for vacuum-type sewers or for gravity sewers where the sewer pipe is below the water main. The crossing shall be arranged so that all water main joints are at least 6 feet from all joints in gravity and pressure sewer pipes. This distance can be reduced to 3 feet for vacuum-type sewers. When the above specified vertical distance criteria cannot be met due to an existing underground facility conflict, smaller separations are allowed if one of the following is met:
   a) The sewer pipes are designed and constructed equal to the water pipe and pressure tested at 150 psi.
   b) The sewer is encased in a watertight carrier pipe or concrete.

3. Air release valves shall be provided at high points of new force main sanitary sewers.

4. Gravity sanitary sewers constructed within a public wellfield protection area shall be C-900 PVC or Ductile Iron Pipe. The maximum allowable exfiltration rate of gravity sanitary sewers constructed in a public wellfield protection area shall be:
   a) Residential Land Uses. Fifty (50) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe.
   b) Non-Residential Land Uses. Twenty (20) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe.
   c) Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

5. The maximum allowable exfiltration rate of gravity sanitary sewers constructed outside a public wellfield protection area shall be one hundred (100) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe. Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

6. Forcemain sanitary sewers constructed within a public wellfield protection area shall be ductile iron, C-900 PVC, HDPE or reinforced concrete pressure sewer pipes.

7. The maximum allowable exfiltration/leakage rate of forcemain sanitary sewers shall be:
   a) Ductile Iron, C-900 PVC, HDPE and PVC Pipe. The allowable leakage rate specified in American Water Works Association Standard (AWWAS) C600-82 at a test pressure of 100 psi for a duration of not less than two (2) hours.
   b) Reinforced Concrete Pressure Pipe. Half (1/2) the allowable leakage rate specified in AWWA C600-82 at a test pressure of 100 psi for a duration of not less than two (2) hours.
   c) Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

8. The contractor shall verify nature, depth, and character of existing underground utilities prior to start of construction.

9. In no case shall a contractor install utility pipes, conduits, cables, etc. in the same trench above an existing water or sewer pipe except where they cross.

10. If any area of the work site is found to contain buried solid waste and/or ground or ground water contamination, the following shall apply:
    a) All work in the area shall follow all applicable safety requirements (e.g., OSHA, etc.) and notification must be provided to the appropriate agencies.
    b) Immediately notify the Environmental Monitoring and Restoration Division (EMRD). The EMRD can be contacted at (305) 372-6700.
    c) If contaminated soils and/or buried solid waste material is excavated during construction, then they require proper handling and disposal in accordance with the local, state and federal regulations. Be advised that the landfill owner/operator is the final authority on disposal and may have requirements beyond those provided by herein. If disposal within a Miami-Dade County owned landfill (Class I landfill) is appropriate and selected, please contact the Miami-Dade County Department of Solid Waste Management at (305) 594-6666 for information.
    d) The reuse of contaminated soils that are not returned to the original excavation requires prior approval of a Soil Management Plan from the Environmental Monitoring and Restoration Division. The EMRD can be contacted at (305) 372-6700.

11. Pumps must comply with the National Electrical Code (NEC) requirements for Class I, Group D, Division 1 locations (Explosion Proof).

12. The contractor is advised that a Tree Removal/Relocation Permit may be required prior to the removal and/or relocation of tree resources. Prior to removing or relocating any trees, the Contractor shall notify the Tree and Forest Resources Section of DERM at (305) 372-6574 or via e-mail at: tfrs@miamidade.gov , or contact the municipality with tree ordinance jurisdiction to obtain any required permits. Those trees not interfering with the construction shall be protected in place in accordance with the provisions of Section 24-49.5 of the Miami-Dade Code.

13. Please note that the demolition, removal, and/or disturbance of existing underground utilities that contain asbestos- cement pipes (ACP) are subject to the provisions of 40 CFR-61 Subpart M. Therefore, pursuant to the provisions of 40 CFR-61-145, a NOTICE OF DEMOLITION OR ASBESTOS RENOVATION form must be filed with the Air Quality Management Division (AQMD) of DERM, at least ten (10) working days prior to starting of any work. Note that the backfilling and burial of crushed ACP would cause these locations to be considered active disposal sites and subject to 40 CFR-61.154, and 40 CFR-61.151 a year after project completion.
    Existing standard operating procedures, as well as applicable federal, state and local regulatory criteria, must be followed and implemented to minimize any potential release of fugitive emissions, especially during project construction activities. The AQMD can be contacted via email at asbestos@miamidade.gov or 305-372-6925.

Rev. 4/30/2018

g:\pollution regulation\delegated env permitting\ww-conv_extensions\sewer extensions\forms and packages\ww application package\ww permit package\package march-2017\rer-derm-notes official last one-revised(2018-0429).doc

FOR ALL PROJECT WHERE REMOVAL OF UTILITY LINES IS PROPOSED

1– ALL EXISTING UTILITIES BEING REMOVED AND/OR RELOCATED MUST REMAIN IN EFFECT AND IN SERVICE, UNTIL SUCH TIME WHEN PROPOSED REPLACING UTILITIES HAVE BEEN INSTALLED AND IN SERVICE AND ALL RELATED SERVICES TO THE FIRST LINES HAVE BEEN TRANSFERRED TO THE LATTER ONES, BY M–DWASD FORCES AT OWNERS EXPENSES.

2– ALL ABANDONED OR REPLACED UTILITY LINES LOCATED IN PRIVATE PROPERTY SHALL BE REMOVED AND CAPPED AT MAIN, WHEN APPLICABLE, AFTER ALL INSTALLED SERVICES TO OR FROM THEM HAVE BEEN TRANSFERRED TO THE ALREADY INSTALLED AND IN SERVICE PROPOSED UTILITY LINES, ANY RELATED EASEMENT SHALL BE RELEASED AND VACATED AFTER REMOVAL OF LINES AND RESTORATIONS OF SITE, IF APPLICABLE, HAVE BEEN COMPLETED.

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

NO.	REVISIONS	DATE	BY

SSN ENGINEERING, LLC
13899 BISCAYNE BLVD., STE 310
NORTH MIAMI BEACH, FL 33181
PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

SSN ENGINEERING

PROJECT NO.
202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

GENERAL NOTES

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO.
C-200

1. ALL MATERIALS AND CONSTRUCTION UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF OPA-LOCKA AND/OR MIAMI-DADE COUNTY WATER & SEWER DEPARTMENT (MD-WASD) AND/OR MIAMI DADE COUNTY PUBLIC WORKS DEPARTMENT (MD-PWD) AND/ OR THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT.

2. MINIMUM COVER OVER MAINS SHALL BE 3'-0". 2'-0" FOR SERVICE LINES, UNLESS SPECIFIC WRITTEN EXCEPTION IS ISSUED OR REQUIRED BY AN AUTHORIZED REPRESENTATIVE OF CITY OF OPA-LOCKA.

3. DETECTOR TAPE SHALL BE INSTALLED 18" ABOVE THE CENTERLINE OF MAINS AND SERVICES. TAPES SHALL BE GREEN CONTINUOUSLY MARKED "CAUTION WASTEWATER FORCE MAIN BURIED BELOW".

4. ALL VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND No. 53 C.I. VALVE BOXES AND LIDS.

5. LOW PRESSURE SEWER MAIN SHALL BE HDPE SDR-11. SERVICE LINES SHALL BE HDPE SDR-9.

6. ALL JOINTS FOR LOW PRESSURE HDPE MAIN SHALL BE BUTT-FUSION WELDED. ALL WELDING OF JOINTS SHALL BE IN STRICT CONFORMITY WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER UNLESS OTHERWISE SPECIFIED IN WRITING.

7. CONTRACTOR MUST CALL THE CITY OF OPA-LOCKA INSPECTION DIVISION AND ALL OTHER APPLICABLE PERMITTING AGENCIES TO ARRANGE FOR A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO PROPOSED START OF CONSTRUCTION.

8. CITY OF OPA-LOCKA PERSONNEL WILL INSPECT ALL FACILITIES APPROVED BY THE ENGINEERING DEPARTMENT. ALL OTHER REQUIREMENTS OF THE PERMITTING AGENCY SHALL BE IN ACCORDANCE WITH THEIR STANDARDS AND REQUIREMENTS.

9. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY CITY OF OPA-LOCKA:

*EASEMENTS, IF REQUIRED (WHETHER BY DEED OR PLAT SUITABLY RECORDED)
* CONTRACTOR'S WAIVER AND RELEASE OF LIEN
* CONTRACTOR'S LETTER OF WARRANTY (I.E. LETTER AGREEMENT)
* AS-BUILT 24" x 36" SHOWING SPECIFIC LOCATIONS, DEPTHS, ETC. OF ALL WATER FACILITIES AS LOCATED BY A LICENSED SURVEYOR, ALONG WITH TWO (2) PRINTS OF THE "AS-BUILT" WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR OR ENGINEER OF RECORD AND ENDORSED BY THE CONTRACTOR IN ACCORDANCE WITH MD-WSD STANDARDS.

10. ALL NEW CONNECTIONS FROM EXISTING CITY OF OPA-LOCKA MAINS TO BE INSPECTED BY CITY OF OPA-LOCKA FORCES PRIOR TO BACKFILL.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL LOCATIONS, DIMENSIONS, ELEVATIONS AND THE LOCATIONS OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE LOCATIONS SHOWN ON THE PLANS ARE NOT GUARANTEED ACCURATE OR CORRECT BY THE KNOWN UTILITY COMPANIES.

12. THRUST BLOCKS SHALL BE PROVIDED TO ALL BENDS, TEES AND PLUGS IN ACCORDANCE WITH MD-WASD STANDARD DETAILS.

13. PIPE INSTALLATION, CLEANING, FLUSHING, AND TESTING, AS PER CITY OF OPA-LOCKA AND STATE OF FLORIDA STANDARDS FOR THE INSTALLATION OF PRESSURE SEWER BY CUSTOMER DONATION PROJECTS.

14. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF INSPECTIONS FOR ANY CONSTRUCTION ACTIVITIES OCCURRING OUTSIDE NORMAL WORKING HOURS (8:00 a.m. TO 5:00 p.m.) SATURDAYS AND SUNDAYS AND HOLIDAYS EXCLUDED AND ARRANGEMENTS FOR INSPECTIONS OUTSIDE NORMAL WORKING HOURS MUST BE MADE A MINIMUM OF 48 HOURS IN ADVANCE OF THE CONSTRUCTION ACTIVITY.

15. ALL TRENCHES TO BE EXCAVATED AND BACKFILLED AS PER THE MD-WASD DETAIL GS-1.9.

16. SURFACE RESTORATION, PAVEMENT REPLACEMENT, SIDEWALK REPLACEMENT, TRENCH BACKFILLING AND COMPACTION SHALL COMPLY WITH THE APPLICABLE CURRENT MD-WASD, MD-PWD AND FDOT STANDARDS.

17. THE ENGINEER OF RECORD SHALL PROVIDE CITY OF OPA-LOCKA WITH A SIGNED AND SEALED PRESSURE TEST REPORT CERTIFYING PRESSURE TEST RESULTS.

18. FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE SHALL BE CONDUCTED BY THE CONTRACTOR FOLLOWING METHODS AND PROCEDURES NOTED ASTM DESIGNATION: F2164-13

19. A HORIZONTAL DISTANCE OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER AND SEWER MAINS. WHEN A 10 FEET HORIZONTAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, THIS HORIZONTAL DISTANCE MAY BE REDUCED TO 6 FEET. IF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF A GRAVITY SANITARY SEWER, THIS HORIZONTAL DISTANCE MAY BE REDUCED TO 3 FEET.

20. IN HIGHLY CONGESTED AREAS, WHERE EITHER WATER OR SEWER FACILITIES ARE EXISTING AND THE SEPARATION REQUIREMENTS CANNOT BE MET, SPECIAL CONSIDERATION MAY BE GIVEN SUBJECT TO A COMPLETE EVALUATION OF EXISTING AND PROPOSED CONDITIONS.

21. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

22.TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P, EXCAVATIONS, TRENCHING AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS STANDARDS AND INTERPRETATIONS.

23. ALL ABOVE GROUND PIPE & FITTING, VALVE BOXES, AIR RELEASE VALVE COVERS AND ANY OTHER MARKING DEVICE, SHALL BE COLOR CODED IN ACCORDANCE WITH THE UTILITY LOCATION & COORDINATION COUNCIL UNIFORM COLOR CODE AS SHOWN IN MIAMI-DADE COUNTY WATER & SEWER DEPARTMENT (MD-WASD).

NOTES FOR CONTAMINATED SITES

IF ANY AREA OF THE WORK SITE IS FOUND TO CONTAIN BURIED SOLID WASTE AND/OR GROUND OR GROUND WATER CONTAMINATION, THE FOLLOWING SHALL APPLY:

1. ALL WORK IN THE AREA SHALL FOLLOW ALL APPLICABLE SAFETY REQUIREMENTS (E.G., OSHA, ETC.) AND NOTIFICATION MUST BE PROVIDED TO THE APPROPRIATE AGENCIES.

2. IMMEDIATELY NOTIFY THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION (EMRD). THE EMRD CAN BE CONTACTE AT (305) 372-6700.

3. IF CONTAMINATED SOILS AND/OR BURIED SOLID WASTE MATERIAL IS EXCAVATED DURING CONSTRUCTION, THEN THEY REQUIRE PROPER HANDLING AND DISPOSAL IN ACCORDANCE WITH THE LOCAL, STATE AND FEDERAL REGULATIONS. BE ADVISED THAT THE LANDFILL OWNER/OPERATOR IS THE FINAL AUTHORITY ON DISPOSAL AND MAY HAVE REQUIREMENTS BEYOND THOSE PROVIDED BY HEREIN. IF DISPOSAL WITHIN A MIAMI-DADE COUNTY OWNED LANDFILL (CLASS I LANDFILL) IS APPROPRIATE AND SELECTED, PLEASE CONTACT THE MIAMI-DADE COUNTY DEPARTMENT OF PUBLIC WORKS AND WASTE MANAGEMENT AT (305) 594-1670 FOR INFORMATION.

4. THE REUSE OF CONTAMINATED SOILS IS PROHIBITED WITHOUT PRIOR APPROVAL FROM THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION. THE EMRD CAN BE CONTACTED AT (305) 372-6700.

5. A SUBSURFACE INVESTIGATION WAS CONDUCTED BY ENVIRONMENTAL REGULATORY COMPLIANCE, INC. (ERC) DATE MARCH 2022. THE REPORT STATED THAT THE PRESENCE OF SOLID WASTE MIXED WITH OTHER MATERIAL (CARBONATE AND SILICA SAND, LIMEROCK, AND ORGANIC MATERIAL) WILL NOT SUBSIDE BY THE INSTALLATION OF THE 2 INCH SEWER LINE.

DESIGN APPROACH

1. A SUBSURFACE INVESTIGATION WAS CONDUCTED BY ENVIRONMENTAL REGULATORY COMPLIANCE, INC. (ERC) DATE MARCH 2022. THE REPORT STATED THAT THE PRESENCE OF SOLID WASTE MIXED WITH OTHER MATERIAL (CARBONATE AND SILICA SAND, LIMEROCK, AND ORGANIC MATERIAL) WILL NOT SUBSIDE BY THE INSTALLATION OF THE 2 INCH SEWER LINE.

2. DUE THE UNDERLYING SOIL CONDITION OF THE SITE, HDPE PIPE WAS USED TO ADDRESS ANY CONTAMINATION ISSUES. ACCORDING TO THE PIPE MANUFACTURER, POLYETHYLENE IS NON-CONDUCTIVE AND IMMUNE TO GALVANIC AND ELECTROCHEMICAL EFFECTS. THUS POLYETHYLENE WILL NOT CORRODE IN THE MANNER OF METAL AND CONCRETE PIPING. PERFORMANCE POLYETHYLENE PIPES HAVE OUTSTANDING RESISTANCE TO A WIDE RANGE OF CHEMICALS AND ENVIRONMENTAL CONDITIONS, MAKING THEM IDEAL CANDIDATES FOR USE WITH CORROSIVE FLUIDS AND CHEMICALS, AND UNDER HARSH ENVIRONMENTAL CONDITIONS.

3. ALL THE JOINT IN THE HDPE PIPES WILL BE FUSED JOINT, THERFORE NO POSSIBILITY OF JOINT LEAKING.

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

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PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

NO.	REVISIONS	DATE	BY

SSN ENGINEERING, LLC
13899 BISCAYNE BLVD., STE 310
NORTH MIAMI BEACH, FL 33181
PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

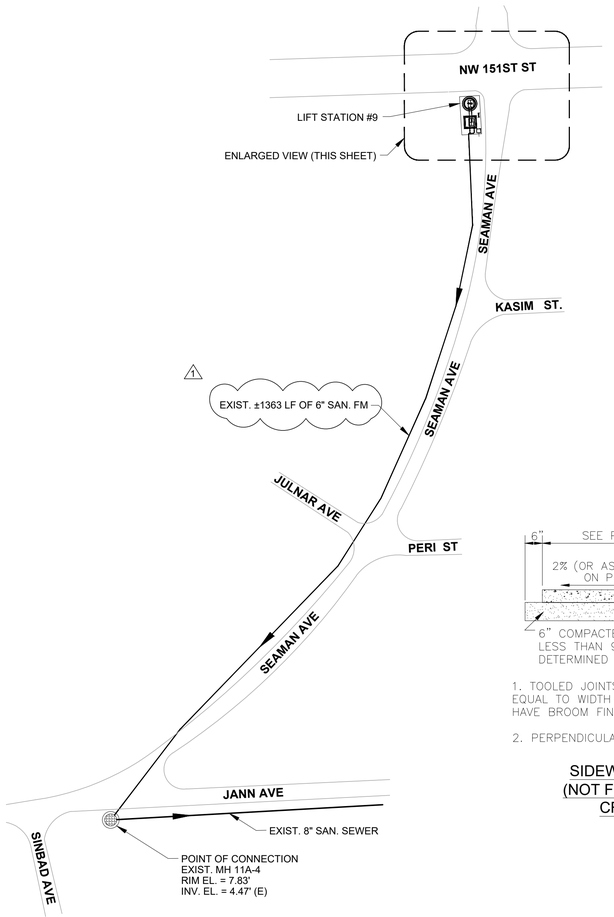
PROJECT NO.
202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

GENERAL NOTES

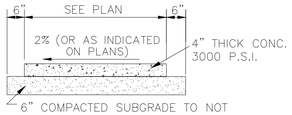
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO.
C-201



OVERALL VIEW OF POINT OF CONNECTION

N.T.S.

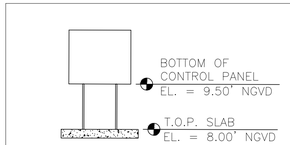


1. TOOLED JOINTS TO OCCUR AT INTERVALS EQUAL TO WIDTH OF SIDEWALK SIDEWALK TO HAVE BROOM FINISH

2. PERPENDICULAR TO PATH OF TRAVEL.

SIDEWALK DETAILS (NOT FOR DRIVEWAY CROSSING)

N.T.S.



CONTROL PANEL

(SEE ELECTRICAL PLANS FOR DETAILS)

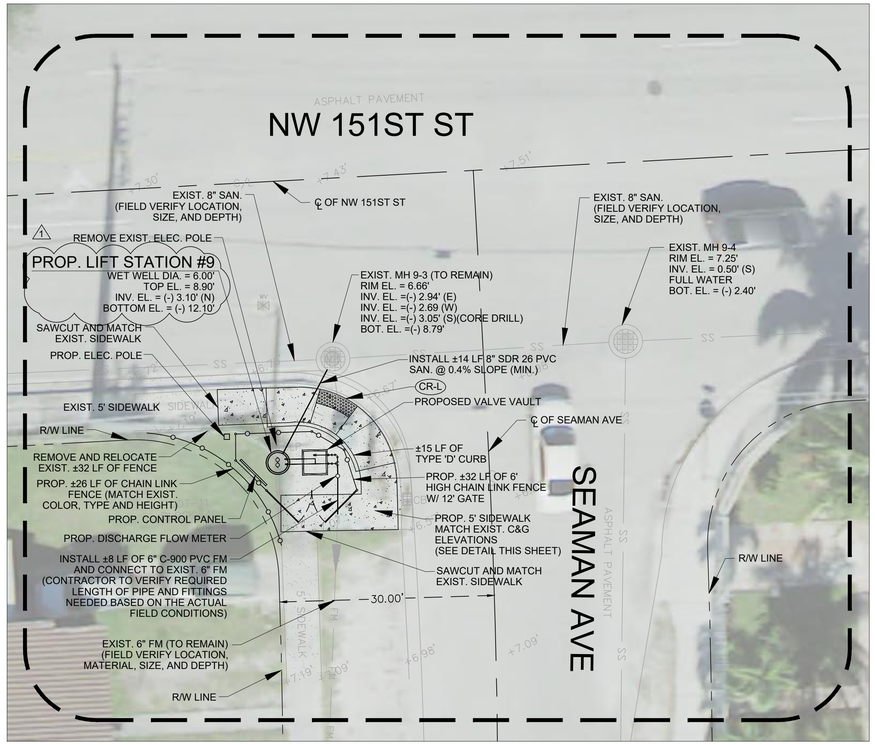
GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN FUNCTION OF SEWAGE PUMPING DURING CONSTRUCTION BY UTILIZING BY-PASS PUMPING SYSTEM, FITTINGS AND VALVES AS REQUIRED. CONTRACTOR SHALL SUBMIT A PLAN OUTLINING SEWAGE "BY-PASS" PROCEDURE TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.
2. THE EXISTING UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE CITY OF OPA-LOCKA WATER AND SEWER ATLAS, SURVEY AND SITE VISIT. CONTRACTOR MUST VERIFY SIZE, LOCATION, AND INVERTS OF ALL UTILITIES PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL PERFORM ALL WORK WITHIN LEGAL PROPERTY AND EASEMENT, AND SHALL NOT DISTURB ADJACENT PROPERTY.
4. CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING PROPOSED PIPING/FITTINGS CONNECTING TO IT.
5. CARE SHOULD BE TAKEN TO AVOID DISTURBING ELECTRICAL SERVICE IN THE AREA UNDER CONSTRUCTION.
6. CONTRACTOR SHALL INCLUDE NECESSARY CUTTING, PATCHING, AND RESTORATION OF ALL EXISTING SURFACES TO MATCH SURROUNDING AREAS.
7. CONTRACTOR TO COAT ALL UNDERGROUND FITTINGS THOSE ARE IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC OR APPROVED EQUAL.
8. ELEVATIONS INDICATED HEREON ARE IN FEET AND DECIMALS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929).
9. THE MINIMUM WET-WELL BOTTOM SLOPE SHALL BE 2:1 TO ALLOW SELF-CLEANING AND MINIMUM DEPOSIT OF DEBRIS.
10. THE ELECTRICAL SYSTEMS AND COMPONENTS IN RAW WASTEWATER WET WELLS SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE REQUIREMENTS FOR CLASS I, GROUP D, DIVISION 1.
11. THE STATION SHOULD BE EQUIPPED WITH MISSION M850 RTUs FOR REAL-TIME ALARMS AND STREAMING DATA OR APPROVED EQUAL.
12. FLOW METER SHALL BE ABB ELECTROMAGNETIC FLOWMETER DN150 (6") OR APPROVED EQUAL.

LEGEND

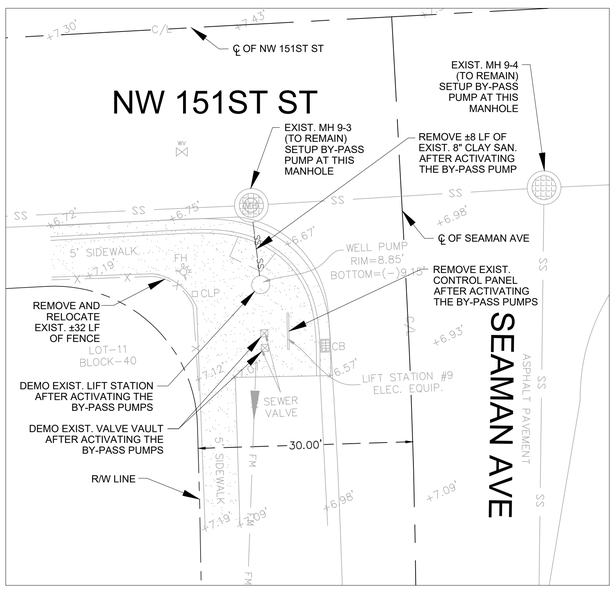
	R/W LINE OR PROPERTY LINE
	BUILDING OUTLINE
SD	EXISTING STORM PIPE
WM	EXISTING WATER PIPE
SS	EXISTING SAN. SEWER PIPE
	EXISTING SAN. SEWER MANHOLE
7.31	EXISTING GRADE ELEVATION
	PROPOSED FORCE MAIN
	EXISTING FIRE HYDRANT

NOTE:
ALL ELEVATIONS REFER TO NGVD 1929.
NAVD88 = NGVD29 - 1.55



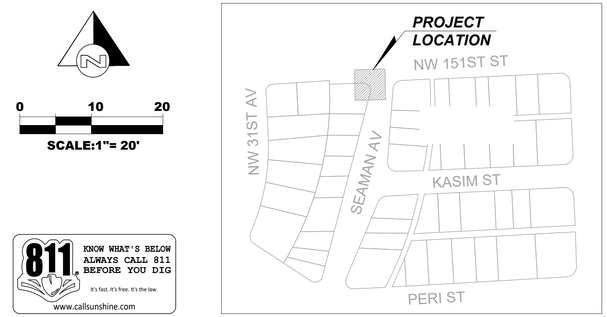
ENLARGED VIEW

1" = 10'



SITE DEMOLITION PLAN

1" = 10'



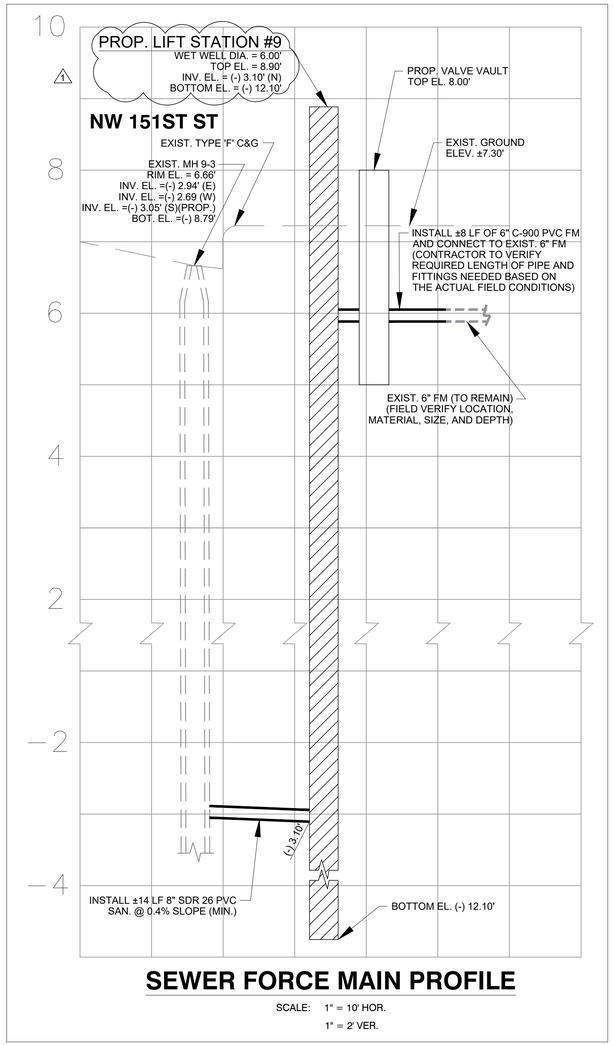
LOCATION MAP

N.T.S.

0 10 20

SCALE:1"= 20'

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com



SEWER FORCE MAIN PROFILE

SCALE: 1" = 10' HOR.
1" = 2' VER.

CONSTRUCTION SET

NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS

SSN ENGINEERING, LLC
2020 NE 163RD ST, SUITE 300HH
NORTH MIAMI BEACH, FL 33162
PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

SSN ENGINEERING

PROJECT NO. 202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

SANITARY SEWER PLAN AND PROFILE

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 04-16-2023
SHEET NO. C-300

1. ALL MATERIALS AND LABOR UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE MIAMI-DADE WATER AND SEWER DEPARTMENT AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS.
2. COVER OVER WATER OR SEWER FORCE MAINS SHALL BE 4'-0" MIN.
3. ALL MAIN LINE VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND NO. 3 OR 53 VALVE BOXES. FIRE HYDRANTS AND SERVICE VALVES SHALL BE INSTALLED COMPLETE WITH 6" RISER PIPES AND NO. 2 VALVE BOXES.
4. ALL FORCE MAIN SERVICE CONNECTIONS INTO PRESSURE TRANSMISSION MAINS SHALL HAVE A SHUT OFF VALVE AND CHECK VALVE AT THE POINT OF ENTRY.
5. ALL GRAVITY SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPARTMENT STANDARDS.
6. ALL WATER METERS WILL BE INSTALLED BY THE MIAMI-DADE WATER AND SEWER DEPARTMENT PROVIDING THE APPROPRIATE CHARGES HAVE BEEN PREPAID.
7. FIRE HYDRANT REQUIREMENTS (NUMBER AND LOCATION) SHALL BE AS REQUIRED BY THE MIAMI-DADE COUNTY FIRE DEPARTMENT OR THE APPROPRIATE FIRE AGENCY WITH INSTALLATION IN ACCORDANCE WITH DEPARTMENT STANDARDS.
8. CONTRACTOR MUST CALL M-DWASD INSPECTION DIVISION TO ARRANGE FOR A PRECONSTRUCTION MEETING 2 FULL BUSINESS DAYS PRIOR TO PROPOSED START OF CONSTRUCTION. CONTACT ONE CALL CENTER 48 HRS PRIOR TO EXCAVATION.
9. CONTRACT INSPECTOR WILL INSPECT ANY FACILITIES APPROVED BY THE DEPARTMENT. ALL OTHER REQUIREMENTS OF THE PERMITTING AGENCY SHALL BE IN ACCORDANCE WITH THEIR STANDARDS AND REQUIREMENTS.
10. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY THE DEPARTMENT.
    a. EASEMENTS, IF REQUIRED.
    b. CONTRACTOR'S WAIVER AND RELEASE OF LIEN.
    c. ABSOLUTE BILL OF SALE.
    d. i. CONTRACTOR'S LETTER OF WARRANTY (I.E., LETTER AGREEMENT).
       ii. DEVELOPER'S CONTRACT BOND (I.E., CONTRACT AGREEMENT).
    e. "AS-BUILT" PRINTS 24"x36" SHOWING SPECIFIC LOCATIONS, DEPTH, ETC. OF ALL WATER AND SEWER FACILITIES AS LOCATED BY A LICENSED FLORIDA SURVEYOR, ALONG WITH PRINTS OF "AS-BUILT" WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR. (No. OF PRINTS: 3-FOR WATER, 4-FOR GRAVITY SEWER AND 5-FOR FORCE MAIN OR PUMP STATION PROJECTS). THE DEPARTMENT RESERVES THE RIGHT TO REQUIRE SUBMITTAL ON ELECTRONIC MEDIA IN ACCORDANCE WITH SEC. 01775 "MAGNETIC MEDIA SUBMITTAL".
    f. H.R.S. LETTER OF RELEASE REQUIRED FOR ALL WATER PROJECTS.
    g. BILL OF SALE SKETCH (8½"x11") FOR WATER AND SEWER, SEPARATELY.
11. ALL NEW CONNECTIONS FROM EXISTING DEPARTMENT MAINS TO BE MADE BY DEPARTMENT FORCES ONLY. THE CONTRACTOR TO EXCAVATE AT REQUIRED LOCATIONS, PROVIDE AND INSTALL MATERIAL WITH FITTINGS, PRIOR TO TAP.
12. AN APPROVED PAVING AND DRAINAGE PLAN MUST BE SUBMITTED TO MDWASD FOR ALL NEW SUBDIVISIONS PRIOR TO APPROVAL OF WATER AND SEWER PERMIT PLANS, UPON REQUEST.
13. UNLESS OTHERWISE SPECIFIED, ALL TAPS 20 INCHES AND SMALLER FOR CONNECTIONS TO EXISTING MAINS WILL BE DONE BY DEPARTMENT FORCES. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE PERMITTED TO TAP EXISTING MAINS IN THE SIZE RANGE SPECIFIED ABOVE. THE TAPPING SLEEVE AND TAPPING VALVE ARE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE INSPECTOR.

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
03/01/2010	V.F.C.

STANDARD DETAIL
STANDARD REQUIREMENTS WATER AND SEWER CONSTRUCTION

GS 0.5 SHEET 1 OF 2

1. AT THE COMPLETION OF ANY WATER AND SEWER JOB, EITHER DONATION OR CONTRACT, THE CONTRACTOR SHALL SUBMIT:
    a. AS-BUILT PRINTS WHICH HAVE BEEN SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER. (QTY. OF PRINTS, AS REQUIRED BY THE DEPARTMENT.)
2. "AS-BUILT" FORMAT:
    a. 24"x36" PRINTS
    b. LOCATION MAP SCALE SHOULD BE 1"=300' AND SECTION-TOWNSHIP-RANGE SHOULD BE SHOWN.
    c. THE WORD "AS-BUILT" IN LARGE LETTERS.
    d. TITLE BLOCK WITH DEPARTMENT DS, DW OR ER NUMBER AND PERTINENT INFORMATION.
    e. PREFERRED SCALE TO BE 1"= 40' HORIZONTALLY AND 1"= 4' VERTICALLY*.
    f. STREET NOMENCLATURE.
    g. SEPARATE AS-BUILTS FOR WATER AND SEWER.
    h. SEPARATE WATER AND SEWER PROFILE.
    i. STATIONING STARTING WITH 0+00 AT PERMANENT REFERENCE POINT (I.E., ℄, ℄, ETC.) OR AS SHOWN ON DESIGN PERMIT PLANS, AND TO RUN CONTINUOUSLY TO END OF MAIN.
    j. EASEMENTS, IF ANY, TIED TO PERMANENT REFERENCE POINT.
    k. IDENTITY ALL CONTROL LINES (I.E. BLDG. LINE, PROPERTY LINE, R/W, ETC).
    l. ALL "PROPOSED" INFORMATION TO BE REMOVED FROM PRINTS, LEAVING ONLY "AS-BUILT" INFORMATION REFLECTED IN DRAWINGS.
3. WATER "AS-BUILTS" MUST INCLUDE:
    a. PLANS SHOWING PIPE SIZE, MATERIAL AND OFFSET OF MAIN, DEFLECTIONS (IF ANY), STATION OF SERVICES, HYDRANTS AND FITTINGS AT THE MAINLINE (IF PERPENDICULAR TO IT), AND AT MAIN AND END OF SERVICES IF ANY, OTHER ANGLE, AND DEFLECTION OF PIPE, IF ANY.
    b. PROFILE SHOWING TOP OF GROUND AND TOP OF PIPE ELEVATIONS AT EVERY 100' STATION AND AT ANY CHANGE IN GRADE (WITH CORRESPONDING STATION), PIPE SIZE AND PIPE MATERIALS REFERENCED TO PLAN.
4. SEWER "AS-BUILTS" MUST INCLUDE:
    a. PLAN SHOWING MANHOLE NUMBER, PIPE SIZE AND PIPE MATERIAL OF PIPE, DEFLECTION, IF ANY (FORCE MAIN ONLY), AND LOCATION OF LATERALS WITH REFERENCE TO MANHOLE.
    b. PROFILE SHOWING MANHOLE (AS PER PLAN), RIM AND INVERT ELEVATIONS (IF MORE THAN ONE INVERT, LABEL NORTH, SOUTH , ETC), AND STATION STARTING AT EACH 0+00 AT DOWNSTREAM MANHOLE.
5. FORCE MAIN "AS-BUILT" SAME AS WATER MAIN ABOVE.
6. EACH AS-BUILT SHALL SHOW THE FLORIDA STATE PLANE COORDINATES (CURRENT READJUSTMENT) OF ALL THE MANHOLES AND VALVES AND OF AT LEAST TWO HORIZONTAL CONTROL POINTS PROPERLY IDENTIFIED AND LOCATED WITHIN THE PROJECT.

* OTHER SCALE MAY BE PERMITTED, BUT MUST BE APPROVED BY THE DEPT OF DRAWINGS.

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
03/11/2009	V.F.C.

STANDARD DETAIL
"AS-BUILT" REQUIREMENTS

GS 0.5 SHEET 2 OF 2

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER; SANITARY SEWER FORCE MAIN; RECLAIMED WATER (2)	Water Main — 3 ft. minimum	Water Main — 12 inches is the minimum, 24 inches preferred when 6 inches is the minimum and 12 inches is preferred	Maintain 3 ft. minimum — Water Main
VACUUM SANITARY SEWER	Water Main — 10 ft. preferred 3 ft. minimum	Water Main — 12 inches preferred 6 inches minimum	Maintain 3 ft. minimum — Water Main
GRAVITY OR PRESSURE; SANITARY SEWER FORCE MAIN; RECLAIMED WATER (4)	Water Main — 10 ft. preferred 6 ft. minimum (3)	Water Main — 24 inches is the minimum, 42 inches is the preferred, 5 inches is the minimum and 12 inches is preferred	Maintain 6 ft. minimum — Water Main
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 ft. minimum	-	-

NOTES
1. MAIN SHOULD BE ABOVE OTHER PIPE WHEN WATER MAIN MUST BE BELOW OTHER PIPE. THE MINIMUM SEPARATION IS 12 INCHES.
2. RECLAIMED WATER REGULATED UNDER PART III, OF CHAPTER 62-610, F.A.C.
3. 6 FEET MINIMUM SEPARATION REQUIRED FOR SEWAGE FLOW GREATER THAN 1 MGD.
4. RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

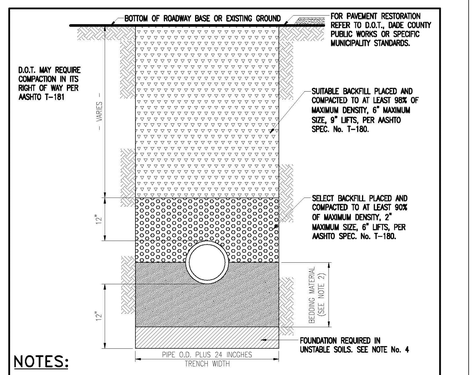
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
10/06/2008	V.F.C.

STANDARD DETAIL
WATER AND SEWER MAINS CROSSING

GS 1.5 SHEET 1 OF 1



NOTES:

1 FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.

2 UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, OR WASHED AND GRADED LIMEROCK (3/8"-1½"), COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. No. T-180.

3 WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.

4 WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS BELOW THE WATER TABLE, A FOUNDATION IS REQUIRED. COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-180. FOUNDATION MATERIAL SHALL BE SELECT BACKFILL MATERIAL, 2" MAXIMUM SIZE 6" LIFTS EXTEND EXCAVATION AT LEAST 2' DEEPER FOR FOUNDATION UNLESS SUITABLE MATERIAL IS FOUND AT A LESSER DEPTH, GREATER DEPTHS MAY BE REQUIRED FOR EXTREMELY POOR CONDITIONS.

5 POLYETHYLENE ENCASEMENT OF CAST IRON VALVES, PIPE AND FITTINGS, IF REQUIRED BY THE DEPARTMENT, SHALL BE PER ANSI/AWWA C105/A21.5, METHOD A, B OR C FOR TYPE I CLASS C TUBE, MIN. 8 MILS THK

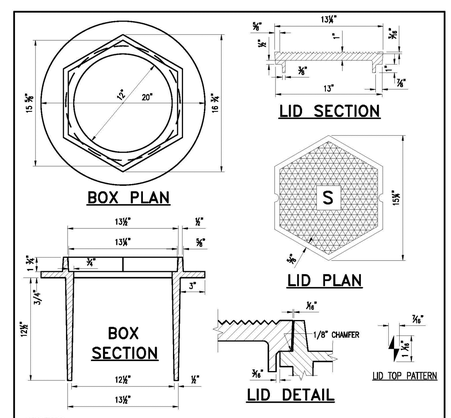
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
11/01/2006	V.E.F.

STANDARD DETAIL
TYPICAL TRENCH BACKFILL FOR D.I. WATER AND FORCE MAINS

GS 1.9 SHEET 1 OF 1



NOTES:

1. MACHINE FINISH BOTTOM OF COVER AND SEAT OF FRAME.
2. ALL DIMENSIONS ARE NET CASTING, NOT PATTERN.
3. FOUNDRY AND LOCATION SHALL BE CAST ON BOTTOM OF THE LID. (SEE WS 2.05)
4. MINIMUM WEIGHTS: RING: 134LBS COVER: 44LBS

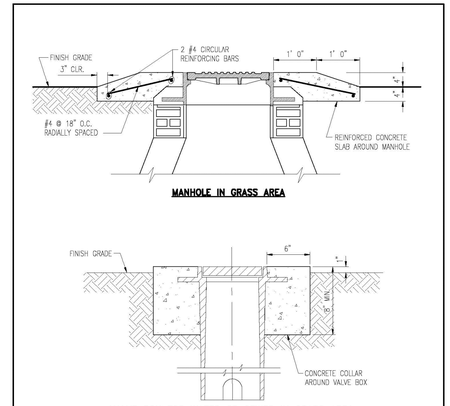
XXXXX ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
06/25/2015	J.B.F.

STANDARD DETAIL
No. 53 C.I. VALVE BOX AND LID

SS 13.0 SHEET 1 OF 1



NOTES:
1. A "GRASS AREA" IS ANY AREA OTHER THAN PAVED SURFACE OR A SIDEWALK AREA.
2. IN "GRASS AREAS" THE TOP OF THE CONCRETE COLLAR OR SLAB SHALL BE FINISHED WITH THE TOP OF THE VALVE BOX OR MANHOLE.
3. AREAS SUPPORTING CONCRETE COLLAR OR SLAB SHALL BE PROPERLY COMPACTED.
4. CLEARANCE OF 30 INCHES FREE FROM OBSTRUCTIONS IN ALL DIRECTIONS.

STANDARD MANHOLE VALVE BOX AND LID ITEM	CROSS REF.	SPEC. REF.
	SS 8.0 T WS 3.10	

MIAMI-DADE COUNTY — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
06/01/2008	V.F.C.

STANDARD DETAIL
MANHOLE / VALVE BOX IN GRASS AREAS

SS 21.0 SHEET 1 OF 1

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

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FOR REFERENCE PURPOSES ONLY

NO.	REVISIONS	DATE	BY

SSN ENGINEERING, LLC
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SSN ENGINEERING

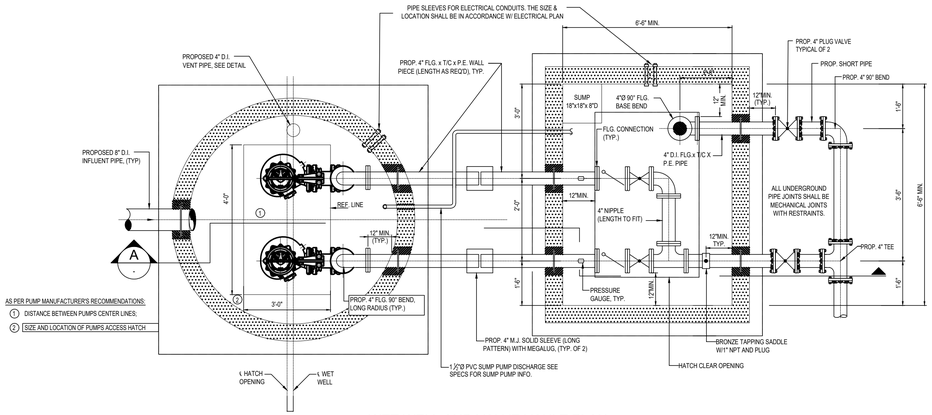
PROJECT NO. 202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

SANITARY SEWER DETAILS

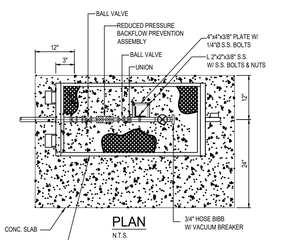
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO. C-301



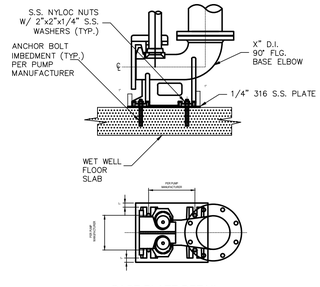
WET WELL AND VALVE VAULT PLAN

SCALE: 1/2"=1'-0"



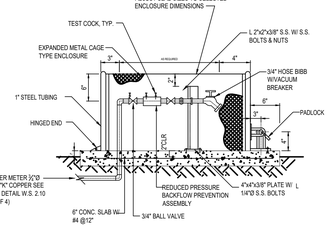
PLAN

N.T.S.



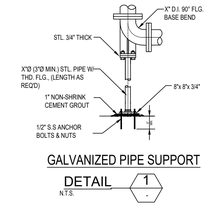
BASE PLATE DETAIL

N.T.S.



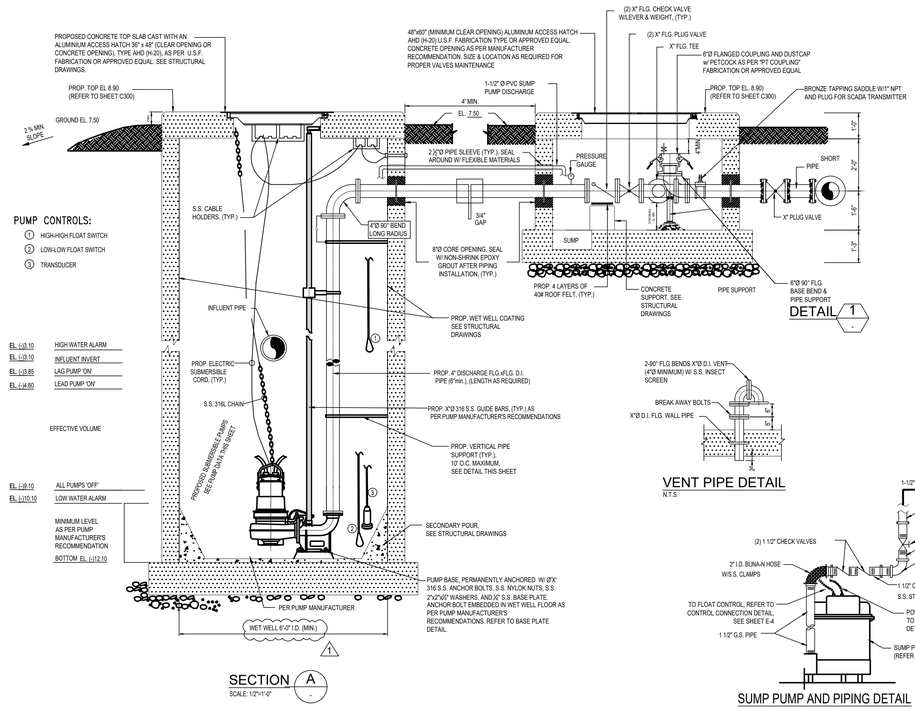
BACKFLOW PREVENTER WITH HOSE BIBB

N.T.S.



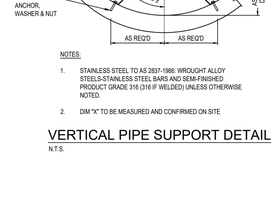
GALVANIZED PIPE SUPPORT DETAIL 1

N.T.S.



SECTION A

SCALE: 1/2"=1'-0"



NOTES:

1. STAINLESS STEEL TO AS 2837-1986 'WROUGHT' ALLOY STEELS-STAINLESS STEEL BARS AND SEMI-FINISHED PRODUCT GRADE 316 (316 IF WELDED) UNLESS OTHERWISE NOTED.
2. DIM "X" TO BE MEASURED AND CONFIRMED ON SITE

VERTICAL PIPE SUPPORT DETAIL

N.T.S.

VENT PIPE DETAIL

N.T.S.

SUMP PUMP AND PIPING DETAIL

N.T.S.

PUMP DATA:

FLUID			RAW SEWAGE
INSTALLATION LOCATION			LIFT STATION No. 9
PUMP TYPE			SUBMERSIBLE PUMP
RATED POINT	CAPACITY, GPM		296
	TDH, FEET		26.3
SHUT OFF HEAD, FT			
CONTINUOUS OPERATING RANGE	MAXIMUM TDH, FT		34
	CAPACITY, GPM		62
	MINIMUM TDH, FT		15
	CAPACITY, GPM		570
	NPSHR, FT		4.48
	PUMP EFFICIENCY	AT B.E.P., %	60.32
		MIN. @ RUNOUT, %	25
PUMP CONSTRUCTION	CASING		CAST IRON ASTM A 48 CLASS 35B
	IMPELLER		CAST IRON ASTM A 48 CLASS 35B
	SHAFT		AISI TYPE 431 STAINLESS STEEL
	BEARINGS L-10 LIFE, HRS.		100,000
	MAX. SHAFT DEFLECTION IN OPERATING RANGE, MILS		–
	MAX. VEL. OF VIBRATIONS IN OP. RANGE, INCH/SEC		–
	SUCTION, INCHES		4"
	DISCHARGE, INCHES		4"
ELECTRIC MOTOR	RATED HP		3.7 HP
	RPM		1170
	VOLTS/PHASE/Hz/S.F.		230/ /60/
	AMBIENT TEMP. FOR MOTOR RATING, °C		39
	MAXIMUM TEMP. RISE, °C		68
	BEARINGS L-10 LIFE, HRS.		100,000
	MAX. VIBRATION AMP., MILS		-
	NOISE LEVEL, dB@1 METER		-
	NEMA DESIGN CODE LETTER		B
	START. CURR. LETTER CODE		G
	INSULATION CLASS		F
	MOTOR RATED HP NOT OVERLOADED AT ANY POINT IN THE PUMPS PERFORMANCE CURVE		
MANUFACTURERS & MODELS *	PUMP		XFP100E CB1 60HZ
	MOTOR		PE35/6-E-60HZ

* CONTRACTOR MAY CHOOSE APPROVED EQUAL PUMPS AND SUBMIT SHOP DRAWINGS TO THE EOR FOR APPROVAL PRIOR TO INSTALLATION

CONSTRUCTION SET

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

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NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS

SSN ENGINEERING, LLC
2020 NE 163RD ST, SUITE 300HH
NORTH MIAMI BEACH, FL 33162
PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

SSN ENGINEERING

PROJECT NO.

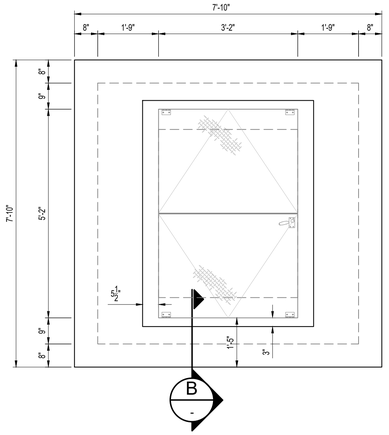
202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

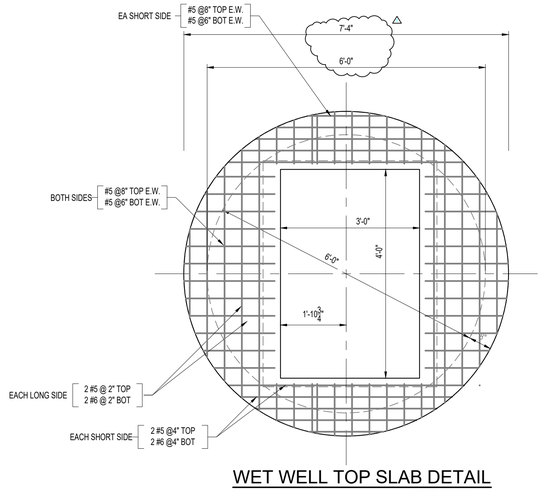
MECH-PLAN-PUMP-DATA

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 04-16-2024
SHEET NO.
C-310

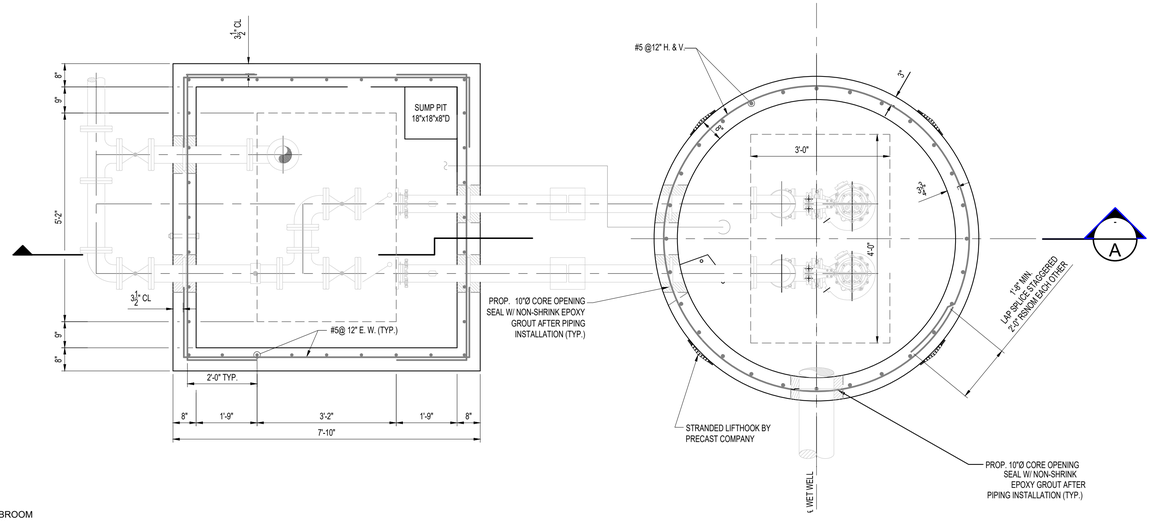


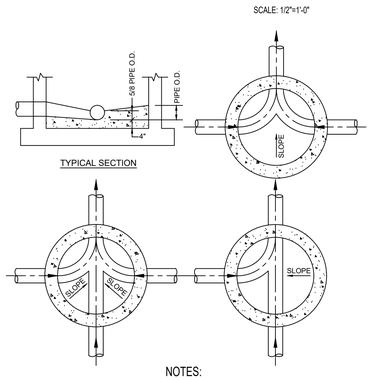
PLAN/VALVE PIT ACCESS



WET WELL TOP SLAB DETAIL

SCALE: 1/2"=1'-0"



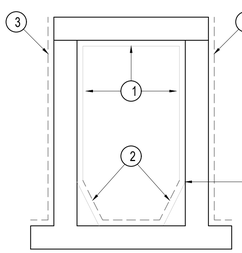


NOTES:

INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT
INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
CHANNELS TO BE FORMED IN ALL MANHOLES TO ACCEPT T.V. CAMERA.
WHEN DIRECTIONAL CHANNELS EXCEEDING 45° OCCUR, AN EXTRA FLOW
LINE ELEVATION DROP OF 0.05' ACROSS MANHOLE SHALL BE PROVIDED.

MANHOLE FLOW CHANNELS

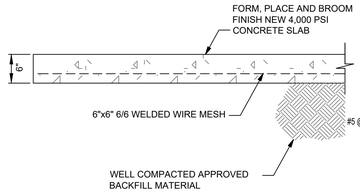
1 - DETAIL N.T.S.



1 - DETAIL N.T.S.

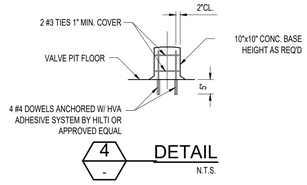
1 SEWPERCOAT (CALCIUM ALUMINATE CEMENT) OR P.P.C. COATING SYSTEM WW-200-/a/ DAMP CONCRETE OR APPROVED EQUAL

2 AND 3 KOP-COAT BITUMASTIC 300-M (COAL-TAR EPOXY).

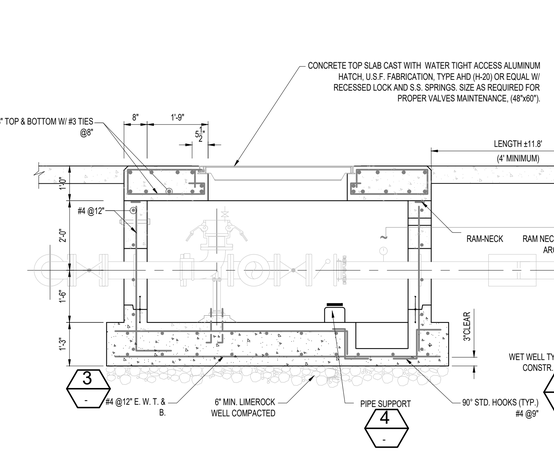


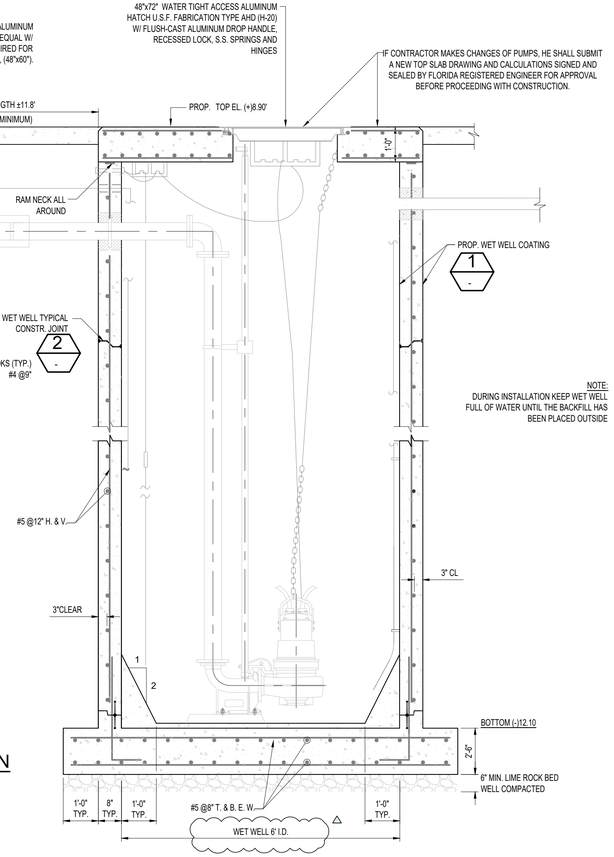
CONCRETE SLAB DETAIL

SCALE: N.T.S



4 - DETAIL N.T.S.





A - SECTION

SCALE: 1/2"=1'-0"

CONSTRUCTION NOTES:

1. THE STANDARD DRAWINGS PRESENTED ARE BASED ON MINIMUM OF 4" DISCHARGE FORCE MAIN.
2. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING NEW PIPE AND FITTINGS FOR CONNECTIONS. tHE CONTRACTOR SHALL INSPECT AND VERIFY ALL SITE CONDITIONS AND DIMENSIONS, AND COORDINATE WITH OTHER TRADES PRIOR TO CONSTRUCTION. WORK SHALL BE SCHEDULED ACCORDING TO SPECIFIED CONSTRUCTION SEQUENCE.
3. ATTENTION TO AVOID DISTURBING EXISTING ELECTRICAL SERVICE IN THE AREA UNDER CONSTRUCTION (FOR EXISTING FACILITIES ONLY).
4. ALL ELEVATIONS FOR UNDERGROUND UTILITIES SHOWN ARE T.O.P. ELEVATIONS UNLESS OTHERWISE SPECIFIED.
5. ALL PIPING, UNLESS SPECIFIED, TO USE DUCTILE IRON WITH LINING OF SEWER APPLICATION. FITTINGS AND CONNECTIONS UNDERGROUND TO USE MECHANICAL JOINT WITH RESTRAINTS; FITTINGS ABOVE GROUND OR IN VAULT TO USE FLANGE JOINT, OR MECHANICAL JOINT WITH RESTRAINTS
6. APPLY ALL UNDERGROUND FITTING WITH BOLT CONNECTIONS IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC OR APPROVED EQUAL.
7. PROVIDE DIELECTRIC FITTINGS BETWEEN TWO DIFFERENT PIPING MATERIALS.
8. PIPE SUPPORTS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
9. PROPOSED WET WELL SHALL BE CYLINDRICAL TYPE MADE OF REINFORCED CONCRETE WITH DEPTH NO GREATER THAN 24 FEET.
10. ALL PUMP CONTROLS SHALL BE SET AS PER DESIGN REQUIREMENTS.
11. ALL PIPING FOR OUTSIDE DROP TO BE DUCTILE IRON WITH LINING OF SEWER APPLICATION. FITTINGS AND CONNECTIONS UNDERGROUND TO USE MECHANICAL JOINT WITH RESTRAINTS.
12. PUMP STARTUP SHALL BE PERFORMED WITH NO EFFLUENT DISCHARGING INTO THE WET-WELL. PUMPS OPERATING POINTS CALCULATED BY PUMP REPRESENTATIVE DURING THE DRAWDOWN TEST SHALL BE NO GREATER THAN 10% OFF THE PUMP CURVE. PROPOSED PUMPS SHALL HANDLE BOTH MAX, MIN AND AVERAGE OPERATING POINTS GIVEN BY THE ENGINEER OF RECORD.
13. THREE PRESSURE GAUGES ARE TO BE INSTALLED INSIDE THE VALVE BOX, ONE GAUGE BEFORE EACH CHECK VALVE AND ONE PRESSURE GAUGE ON THE FORCEMAIN SIDE. PRESSURE DIAL READER SHALL NOT EXCEED 20 PSI.

CONSTRUCTION SET

NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS

SSN ENGINEERING, LLC
2020 NE 163RD ST. SUITE 300HH
NORTH MIAMI BEACH, FL 33162
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SSN ENGINEERING

PROJECT NO. 202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

STRUCTURAL PLANS AND DETAILS

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 04-16-2024
SHEET NO. C-311

ELECTRICAL GENERAL NOTES

I. GENERAL REQUIREMENTS

A. DRAWINGS. THE DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, NOT NECESSARILY SHOWING IN DETAIL OR TO SCALE ALL OF THE MINOR ITEMS. UNLESS SPECIFIC DIMENSIONS ARE SHOWN, THE STRUCTURAL, ARCHITECTURAL, AND SITE CONDITIONS SHALL GOVERN THE EXACT LOCATIONS. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK, CHECK DRAWINGS OF ALL TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE FIELD MODIFICATION IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF VARIOUS TRADES OR FOR PROPER EXECUTION OF THE WORK. SITE CONDITIONS SHALL GOVERN THE EXACT LOCATION OF ALL ELECTRICAL EQUIPMENT, DEVICES, WIRING, CONDUIT, ETC.

ONE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS SHALL BE KEPT ON FILE AT THE SITE FOR THE SOLE USE OF MARKING AS-BUILT DATA. ALL CHANGES SHALL BE MARKED IN RED ON THESE PRINTS AS WORK PROGRESSES.

PRIOR TO EACH REQUISITION FOR PAYMENT, AS-BUILT PRINTS SHALL BE BROUGHT UP TO DATE FOR ACCEPTANCE BY OWNER'S REPRESENTATIVE.

THE COMPLETED SET OF AS-BUILT PRINTS SHALL BE DELIVERED TO THE ARCHITECT/ENGINEER PRIOR TO FINAL PAYMENT FOR INCORPORATION ONTO ORIGINALS.

RISERS ARE DIAGRAMMATIC AND DON'T INTEND TO SHOW EVERY BEND REQUIRED FOR THE INSTALLATION.

B. COORDINATION. CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND/OR CONNECT WITH APPROPRIATE SERVICES ALL ELECTRICAL ITEMS SHOWN ON ANY OF THE ARCHITECTURAL, PLUMBING, AIR CONDITIONING SPRINKLER, INTERIOR DESIGN AND ELECTRICAL DRAWINGS WITHOUT ADDITIONAL EXPENSE TO THE OWNER. IF DISCREPANCIES, CONFLICTS, INTERFERENCES OR OMISSIONS OCCUR BETWEEN DRAWINGS, NOTIFY IN WRITING THE ARCHITECT/ENGINEER IN AMPLE TIME TO PERMIT REVISIONS BEFORE THE BIDS ARE SUBMITTED.

ELECTRICAL CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF PLUG AND CHORD TYPE EQUIPMENT WITH MANUFACTURER AND IS REQUIRED TO PROVIDE ELECTRICAL OUTLETS THAT WILL ACCEPT MANUFACTURER'S SUPPLIED PLUGS.

SEE MECHANICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS AND LOCATION OF A/C UNITS AND ALL OTHER MECHANICAL EQUIPMENT (SOLENOIDS, VAV'S, THERMOSTATS, PUMPS, FANS, SMOKE DETECTORS, DUCT HEATERS, ETC.) THE CONTRACTOR SHALL PROVIDE ALL BRANCH CIRCUIT AND CONTROL WIRING AS INDICATED OR REQUIRED AND IN CONFORMANCE WITH N.E.C. ARTICLE 440 AND MANUFACTURER'S RECOMMENDATIONS. ALL PENETRATIONS SHALL BE MADE WEATHERPROOF DURING CONSTRUCTION AND AFTER FINAL INSTALLATION. A/C EQUIPMENT WIRING, BREAKERS, AND FUSES ARE BASED ON A/C EQUIPMENT SPECIFIED ON CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WIRING, AND OVERCURRENT PROTECTION REQUIREMENTS IF EQUIPMENT USED IS DIFFERENT FROM THAT SPECIFIED. CONTRACTOR SHALL MAKE THESE CHANGES AT NO ADDITIONAL COST TO THE OWNER.

C. TEMPORARY SERVICE TEMPORARY ELECTRICAL POWER AND LIGHTING SHALL BE FURNISHED, INSTALLED AND MAINTAINED FOR ALL TRADES REQUIRING SAME. SYSTEM SHALL CONSIST OF DISTRIBUTION SYSTEM, PANELBOARDS, GROUNDING, BRANCH CIRCUITS, SWITCHES, RECEPTACLES, OUTLETS. SERVICE SHALL BE ARRANGED FOR WITH POWER COMPANY, IF REQUIRED.

D. PERMITS. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, STATE SALES TAX, FEDERAL EXCISE TAX, ROYALTIES AND OTHER TAXES OR FEES AS REQUIRED FOR INSTALLATION OF A COMPLETE SYSTEM AS OUTLINED HEREIN AND AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND INSURANCE.

E. BASIS FOR BIDS EQUIPMENT SPECIFIED SHALL BE ADHERED TO. HOWEVER, OWNER HAS FINAL DECISION ON THE TYPE AND QUALITY OF EQUIPMENT TO BE SUPPLIED.

WITHIN 30-DAYS AFTER THE CONTRACT HAS BEEN EXECUTED, A FORMAL REQUEST FOR THE SUBSTITUTION OF PRODUCTS IN PLACE OF THOSE SPECIFIED WILL BE CONSIDERED, UNDER THE FOLLOWING CONDITIONS:

THE REQUEST IS ACCOMPANIED BY COMPLETE DATA ON THE PROPOSED SUBSTITUTION SUBSTANTIATING COMPLIANCE WITH THE CONTRACT DOCUMENTS INCLUDING PRODUCT IDENTIFICATION AND DESCRIPTION, PERFORMANCE AND TEST DATA, REFERENCES AND SAMPLES WHERE APPLICABLE, AND AN ITEMIZED COMPARISON OF THE PROPOSED SUBSTITUTION WITH THE PRODUCTS SPECIFIED, WITH DATA RELATING TO CONTRACT TIME SCHEDULE, DESIGN AND AESTHETIC EFFECT WHERE APPLICABLE.

THE REQUEST IS ACCOMPANIED BY ACCURATE COST DATA ON THE PROPOSED SUBSTITUTION IN COMPARISON WITH THE PRODUCT SPECIFIED, WHETHER OR NOT MODIFICATION OF THE CONTRACT SUM IS TO BE A CONSIDERATION. IF REDESIGN BY THE ARCHITECT OR HIS CONSULTANTS IS REQUIRED TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL COSTS OF THIS REDESIGN SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE. IF ADDITIONAL WORK IS REQUIRED BY OTHER CONTRACTORS TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL ADDITIONAL COSTS OF THIS WORK SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE.

THE REQUEST SHALL BE ACCEPTED OR REJECTED SOLELY AT THE DISCRETION OF THE OWNER WITH ARCHITECT'S OR ENGINEER'S WRITTEN APPROVAL.

F. CODES & STANDARDS THE WORK PERFORMED UNDER DIVISION 16 SHALL COMPLY WITH THE LATEST EDITION AND REQUIREMENTS OF THE FOLLOWING:

APPLICABLE LOCAL CODES AND ORDINANCES, NATIONAL ELECTRICAL CODE, AS AMENDED BY LOCAL CODE, ALL APPLICABLE FEDERAL AND STATE CODES, REGULATIONS AND STATUTES, APPLICABLE ENERGY CODE, OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), UNDERWRITERS LABORATORIES, INC. (UL), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICANS WITH DISABILITIES ACT (ADA).

G. MATERIALS & EQUIPMENT MATERIAL AND EQUIPMENT SHALL BE NEW, STANDARD, CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH EQUIPMENT, AND SHALL BE THE MANUFACTURER'S LATEST DESIGN.

ALL MATERIALS SHALL BEAR THE LABEL OF THE UNDERWRITERS LABORATORY FOR THE INTENDED USE OR SHALL BE MATERIALS APPROVED BY THE CODE ENFORCING AUTHORITIES AND THE ARCHITECT.

FOLLOW THE INSTALLATION DIRECTIONS AND RECOMMENDATIONS OF MATERIAL AND EQUIPMENT MANUFACTURERS.

ALL WORK SHALL BE PERFORMED BY WORKERS SKILLED IN THEIR RESPECTIVE TRADES AND ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER.

INSTALL EQUIPMENT, INCLUDING SWITCHES, CONTROLLERS, FIXTURES AND TRANSFORMERS SUCH THAT REMOVAL OR REPLACEMENT MAY BE READILY ACCOMPLISHED WITHOUT DAMAGE TO EQUIPMENT OR FASTENERS.

IDENTIFY ALL EQUIPMENT, INCLUDING SAFETY SWITCHES, STARTERS, TRANSFORMERS, PANELS, TERMINAL BOXES, MOTORS, SPECIAL OUTLETS, RELAYS. IDENTIFICATION SHALL CORRESPOND TO THE TERMINOLOGY ON THE CONTRACT DOCUMENTS.

EXAMPLES:
1. AHU #1 STARTER
2. TRANSFORMER T-4
3. EMERGENCY STOP STATION
4. PANEL BC

H. SUPPORTING DEVICES DEVICES, INCLUDING ANCHORS, FASTENERS, HANGERS AND SUPPORTS, SHALL BE OF A TYPE DESIGNED OR FABRICATED FOR THE PURPOSE, AND SHALL ADEQUATELY AND SAFELY SECURE THE MATERIAL AND EQUIPMENT AND PRESENT A NEAT APPEARANCE. USE DEVICES WITH CORROSION RESISTANT CHARACTERISTICS FOR THE ATMOSPHERIC CONDITIONS IN WHICH THEY ARE INSTALLED.

I. BACKBOARDS USE 3/4" THICK EXTERIOR GRADE PLYWOOD, FIRE RETARDANT TREATED, OF WIDTH AND HEIGHT REQUIRED. PLYWOOD SHALL BE NEW AND PAINTED ON ALL SIDES AND EDGES. PAINT BACK SIDE WITH ASPHALTUM WHEN MOUNTED ON MASONRY.

PROVIDE BACKBOARDS FOR ALL GROUP-MOUNTED ELECTRICAL EQUIPMENT, AND FOR COMMUNICATIONS SYSTEMS AS CALLED FOR ON PLANS.

J. RACEWAYS & BOXES ROUTING OF RACEWAYS, INTERCONNECTING OUTLETS AND HOME-RUNS IS UP TO THE ELECTRICAL CONTRACTOR, BUT AFTER COMPLETION OF THE INSTALLATION, HE SHALL SUBMIT TO THE ENGINEER AS-BUILT DRAWINGS OF HIS WORK FOR FUTURE RECORD. DEVICE BOXES SHALL BE INSTALLED FLUSH, CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE INDICATED. ALL CONDUCTORS SHALL BE IN CONDUIT. FOR UNDERGROUND/IN-SLAB LOCATIONS USE GALVANIZED RIGID STEEL (GRS) CONDUIT OR SCHEDULE 40 PVC CONDUIT WITH GROUND WIRE SIZED AS INDICATED OR REQUIRED BY N.E.C., STUB-UPS FROM UNDERGROUND/IN-SLAB PVC CONDUIT SHALL BE GRS. UNDERGROUND GRS SHALL BE COATED WITH TWO COATS OF BITUMASTIC #50 APPLIED WITHOUT THINNING. ALL SECTIONS OF METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND ELECTRICALLY CONTINUOUS. USE ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR CONCEALED WIRING AND ELSEWHERE AS PERMITTED BY THE N.E.C. USE FLEXIBLE METAL CONDUIT FOR FLEXIBLE CONNECTIONS IN ALL WET LOCATIONS. INSTALL A NYLON PULL-CORD IN ALL EMPTY RACEWAYS FOR FUTURE USE. SIZE ALL GUTTERS AND PULL-BOXES PER NEC 370 AND 374. ALL PULL AND JUNCTION BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES.

ALL JUNCTION BOXES SHALL HAVE THE TYPE OF SYSTEM AND VOLTAGE OF CONTAINED CONDUCTORS STENCILED ON THE OUTSIDE OF THE BOX COVER.

EXAMPLES:	POWER 120/208	SOUND
	POWER 277/480	CONTROL 120 V
	T.V.	FIRE ALARM

INSTALL EXPOSED CONDUIT PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING LINES. CONDUIT IN CONCRETE MEMBERS AND SLABS SHALL BE LOCATED SO AS NOT TO AFFECT THEIR STRUCTURAL STRENGTH. CONCEAL ALL CONDUIT IN WALLS, ABOVE CEILINGS, IN OR UNDER SLABS OR IN FURRING, EXCEPT IN MECHANICAL AND ELECTRICAL ROOMS.

ROUTE RACEWAYS TO AVOID CONFLICTS WITH THE WORK OF OTHER TRADES.

ALUMINUM CONDUIT WILL NOT BE PERMITTED.
MINIMUM SIZE OUTLET BOX SHALL BE 4" SQUARE BY 1-1/2" DEEP UNLESS APPROVED OR INDICATED OTHERWISE.
USE CAST METAL OUTLET BOXES WITH GASKETED COVERS FOR ALL EXTERIOR AND FOR ALL DAMP LOCATIONS.

PROVIDE APPROVED FIRE STOPPING MATERIALS AT ALL CHASES TO PREVENT DRAFTS, AT PENETRATIONS INTO RATED SPACES, AND OTHER LOCATIONS AS REQUIRED BY CODES.

PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NEC ARTICLE 300.

PROVIDE EXPANSION FITTINGS IN CONDUIT RUNS CROSSING EXPANSION JOINTS IN THE STRUCTURE.

K. CONDUCTORS. UNLESS OTHERWISE INDICATED, ALL CONDUCTORS ARE #12 IN 1/2" CONDUIT. ALL CONDUCTORS SHALL BE COPPER. ACCEPTABLE INSULATION TYPES ARE TW, THW, THHN, THWN, AND XHHW, WITH USES AS RESTRICTED BY THE NEC. AMPACITIES OF CONDUCTORS IS TO BE BASED ON ARTICLE 310 OF THE NEC WITH UL LIMITATIONS: 60 DEG. RATING FOR SIZES #14 THROUGH #1; 75 DEG. FOR #1/0 AND LARGER. CABLES 3/0 AND LARGER SHALL BE TERMINATED WITH PRESSURE CRIMP CONNECTORS.

FOR 20 AMP BRANCH CIRCUITS GREATER THAN 100 FT. IN LENGTH, ONE WAY, UP TO 200 FT. USE #10 WIRE; OVER 200 FT., USE #8 WIRE.
INCREASE CONDUIT SIZE AS REQUIRED FOR THE LARGER CONDUCTORS. THIS SUPERSEDES WIRE SIZES CALLED FOR ON THE DRAWINGS.

CONDUCTORS SIZE #10 AND SMALLER SHALL HAVE INSULATION COLORED FOR PHASES A, B, C, AND N RESPECTIVELY AS FOLLOWS FOR 3 PHASE SYSTEM:

120/208 VOLTS: BLACK, RED, BLUE AND WHITE
120/240 VOLTS: BLACK, ORANGE (HIGH), BLUE AND WHITE
277/480 VOLTS: BROWN, ORANGE, YELLOW AND GRAY

ALL CONDUCTORS OF THE SAME PHASE IN PARALLELED FEEDERS OR SERVICES SHALL BE SOLIDLY CONNECTED TOGETHER AT THEIR TERMINATION IN A WIREWAY OR SPLICE BOX. MAKE CONDUCTOR LENGTH FOR PARALLEL FEEDERS IDENTICAL.

THE PHASE DESIGNATION OF ALL SECONDARY CONDUCTORS SHALL BE THE SAME AND SHALL BE INDICATED IN OR ON ALL 3 PHASE OUTLETS, TRANSFORMERS, PANELBOARDS, AND DISCONNECT SWITCHES, AND THEY SHALL BE CONNECTED WITH UNIFORM PHASE SEQUENCE.

MAINTAIN A, B, C PHASE RELATION LEFT TO RIGHT WHEN VIEWED FROM THE FRONT.

TAG ALL FEEDER CONDUCTORS AND IDENTIFY MAJOR CONDUITS IN OR AT WIREWAYS, PANELS, PULL BOXES, SWITCHBOARDS, MOTOR CONTROLLERS, CABINETS AND SIMILAR ITEMS TO ASSIST IN FUTURE CIRCUIT TRACING. CONDUCTOR TAGS SHALL BE NONCONDUCTIVE. IDENTIFICATION SHALL CORRESPOND TO THE CONTRACT DOCUMENTS.

COMMUNICATIONS, DATA, AND/OR WIRING WHICH IS NOT INSTALLED IN CONDUIT, AND WHICH IS ROUTED THROUGH ENVIRONMENTAL AIR SPACES, SHALL COMPLY WITH THE REQUIREMENTS OF NEC 300-22. PROVIDE TRAPEZE HANGER ASSEMBLY FOR PLENUM CABLES USING 3/8" DIAMETER HANGER ROD AND CHANNEL ASSEMBLY TO SUPPORT CABLE BUNDLES EVERY 4 FEET. ALL BUNDLES SHALL BE PROPERLY STRAPPED WITH SELF-LOCKING CABLE TIES. EXPOSED CABLES SHALL NOT LIE ON TOP OF CEILING TILES OR LUMINARIES.

L. GROUNDING. END-TO-END LIGHTING FIXTURES SHALL BE CONTINUOUSLY BONDED.

GROUNDING CONTACTS OF RECEPTACLES SHALL BE CONNECTED TO A SOLIDLY GROUNDED CONDUIT SYSTEM OR TO A SYSTEM GROUNDING CONDUCTOR (NOT THE SYSTEM NEUTRAL) BY A STRANDED COPPER WIRE NOT SMALLER THAN #12 AWG OR SHALL BE GROUNDED IN SOME OTHER APPROVED MANNER; THE RESISTANCE BETWEEN THE CONTACTS AND SERVICE GROUND SHALL NOT EXCEED 3 OHMS.

ALL CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

M. SAFETY SWITCHES/CIRCUIT BREAKER DISCONNECTS. SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE KD, FUSIBLE, OR NON-FUSIBLE, WITH POLES, AMPERE, VOLTAGE AND HORSEPOWER RATINGS INDICATED AND SHALL HAVE SOLID NEUTRALS. LUGS SHALL BE U.L. LISTED FOR COPPER-ALUMINUM.

ENCLOSURES FOR SAFETY SWITCHES SHALL BE NEMA-1, GENERAL PURPOSE, EXCEPT THAT SWITCHES INDICATED (WP) WEATHERPROOF, SHALL BE NEMA-3R ENCLOSURES WITH SUITABLE GASKETS AND BONDING MEANS.

SWITCHES AND DISCONNECT SHALL BE AS MANUFACTURED BY SQUARE "D", OR APPROVED EQUAL.

CIRCUIT BREAKER DISCONNECTS MAY BE USED IN LIEU OF SAFETY SWITCHES PROVIDING THEY COMPLY WITH THE SAFETY SWITCH REQUIREMENTS AND ARE SUPPLIED WITHIN THEIR RATINGS AND A SCHEDULE IS SUBMITTED FOR APPROVAL.

P. MOLDED CASE CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL CONFORM TO APPLICABLE FEDERAL SPECIFICATIONS AND NEMA STANDARDS. CIRCUIT BREAKERS SHALL BE OF THE AMPERE RATING, VOLTAGE RATING, NUMBER OF POLES AND CLASS OR INTERRUPTING CAPACITY (I.C.) AS INDICATED. INTERRUPTING RATINGS ARE GIVEN IN ROOT MEAN SQUARE (RMS), SYMMETRICAL AMPERES BASED ON NEMA TEST PROCEDURES. LUGS AND TERMINALS SHALL BE U.L. APPROVED FOR COPPER-ALUMINUM. ACCESSORIES SHALL BE 120 VOLT. A.I.C. OF BREAKER TO BE INSTALLED ON EXIST. PANELS SHALL MATCH EXIST.

EACH CIRCUIT BREAKER SHALL HAVE A TRIP UNIT FOR EACH POLE WITH ELEMENTS PROVIDING INVERSE TIME DELAY UNDER OVERLOAD CONDITIONS AND INSTANTANEOUS MAGNETIC TRIP FOR SHORT CIRCUIT PROTECTION UNLESS INDICATED AS NON-AUTOMATIC. TRIP ELEMENTS SHALL OPERATE A COMMON TRIP BAR TO OPEN ALL ELEMENTS. BREAKERS USED FOR SWITCHING SHALL BE RATED FOR SWITCHING DUTY.

O. FUSES. FUSES SHALL CONFORM TO NEMA AND U.L. AND SHALL BE OF THE VOLTAGE, CLASS AND AMPERE RATING INDICATED.

FUSES FOR MAIN DISCONNECT DEVICES SHALL BE HIGH INTERRUPTING CAPACITY, TIME DELAY, OR TYPE SUITABLE FOR DEVICE. PROVIDE ONE SPARE SET MOUNTED INSIDE THE CUBICLE, FOR EACH MAIN DEVICE.

FUSES FOR MOTORS AND ENCLOSED SWITCHES, NEMA CLASS K-5, UNLESS INDICATED OTHERWISE, DUAL ELEMENT, TIME DELAY. BUSSMAN - FUSETRON, FRN AND FRS, OR EQUAL.

OTHER FUSES SHALL BE AS INDICATED.

P. WIRING DEVICES. DEVICES SHALL BE AS SPECIFIED IN CONTRACT DOCUMENTS.

INSTALL PLATES AND COVERS ON ALL OUTLETS. INSTALL ALL DEVICES UNIFORMLY IN EACH AREA.

PLATES SHALL BE ALIGNED VERTICALLY AND HORIZONTALLY AND ALL EDGES SHALL BE IN FIRM CONTACT WITH SURROUNDING WALL FINISH.

MOUNTING HEIGHTS (TO CENTER LINE OF BOX):

GENERALLY MOUNT RECEPTACLES 18" AFF (ABOVE FINISHED FLOOR) UNLESS NOTED OTHERWISE.
MOUNT SWITCHES AND DIMMERS AT 48" AFF.
MOUNT OUTLETS OVER MIRRORS 8" HIGHER THAN MIRROR.
MOUNT OUTLETS OVER COUNTERS AND CENTERED IN THE BACK SPLASH WHERE IT OCCURS; RECEPTACLE SHALL BE HORIZONTAL.

ADJUST OUTLET HEIGHTS IN CERAMIC TILE WALLS TO BE ENTIRELY IN OR ENTIRELY OUT OF THE TILE. OUTLETS MAY BE HORIZONTAL TO MEET SPACE CONDITIONS.

TEST EACH SOCKET OF EACH OUTLET WITH A DEVICE INTENDED FOR THE PURPOSE.

ALL DEDICATED DATA EQUIPMENT BRANCH CIRCUITS SHALL FEED THIS TYPE OF EQUIPMENT ONLY AND SHALL CARRY A DEDICATED GROUNDING CONDUCTOR TO THE PANEL TO BE CONNECTED TO THE GROUNDING SYSTEM.

III DEMOLITION

REMOVE EXISTING RECEPTACLES, TELEPHONE, SWITCHES, AND ANY ELECTRICAL DEVICES IN WALLS TO BE DEMOLISHED. RELOCATE ANY OF THESE DEVICES AS INDICATED OR REQUIRED BY THE DRAWINGS. PROVIDE ARCHITECT WITH AS-BUILT DRAWINGS OF FINAL INSTALLATION FOR RECORD PURPOSES. CONTRACTOR IS NOTIFIED THAT NOT ALL EXISTING DEVICES MAY HAVE BEEN INDICATED ON THE DRAWINGS AND THAT SOME EXISTING ELECTRICAL DEVICES MAY NOT HAVE BEEN SHOWN IN THEIR ACTUAL LOCATION. CONTRACTOR IS REQUIRED TO VISIT SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO DETERMINING THE WORK THAT NEEDS TO BE ACCOMPLISHED AS PART OF HIS/HER BID.

THE WORK SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, CUTTING, EXTENDING, CONNECTING, REPAIRING, ADAPTING, AND OTHER WORK COINCIDENTAL HERETO, TOGETHER WITH SUCH TEMPORARY INSTALLATIONS AS MAY BE NECESSARY TO SATISFY THE DEMOLITION PROGRAM. APPROVAL SHALL BE SECURED FROM THE LANDLORD/ARCHITECT PRIOR TO CUTTING/DRILLING ANY STRUCTURAL SUPPORT.

ALL BUILDING CONSTRUCTION AFFECTED BY THE REMOVAL, RELOCATION, INSTALLATION OF ANY PIECE OF EQUIPMENT SHALL BE REPAIRED AND FINISHED AS REQUIRED TO MATCH EXISTING CONDITIONS OR AS DIRECTED BY THE ARCHITECTURAL DRAWINGS, SPECIFICATIONS, OR OWNER'S REPRESENTATIVE.

WHEN ELECTRICAL DEVICES ARE INSTALLED IN PARTITIONS OR CEILINGS TO BE REMOVED, THE ELECTRICAL CONTRACTORTRACTOR SHALL DISCONNECT THEM UP TO THE NEXT OUTLET TO REMAIN OR BACK TO THE PANELBOARD, IF EXISTING TO REMAIN OUTLETS ARE FED THROUGH DEMOLISHED PARTITIONS OR CEILINGS, THE CIRCUIT SHALL BE REARRANGED TO MAINTAIN CIRCUIT CONTINUITY. WIRE SHALL BE REMOVED BACK TO SOURCE FROM INACCESSIBLE RACEWAYS NOT REUSED. INSTALL BLANK PLATES ON FLUSH OUTLETS NOT REUSED. PLATE COLOR SHALL MATCH ADJACENT SURFACE AS NEAR AS POSSIBLE IN FINISHED AREAS.

ALL ELECTRICAL EQUIPMENT SHALL BE REMOVED FROM STRUCTURE TO BE REMOVED. ACCESSIBLE RACEWAYS, WIRES, BOXES, SWITCHES, AND OTHER ELECTRICAL ITEMS ASSOCIATED WITH THIS WORK SHALL BE REMOVED IF NOT REQUIRED FOR NEW EQUIPMENT TO CONTINUE IN SERVICE.

ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS DIRECTED BY OWNER.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH NEC 2017, FBC 2020, LOCAL CODES AND ORDINANCES AND ALL STANDARDS OF CONSTRUCTION ESTABLISHED BY THE LANDLORD.
2. SUBMIT SHOP DRAWINGS FOR ACCEPTANCE BY THE ARCHITECT AND/OR ENGINEER BEFORE PROCEEDING WITH THE PURCHASE OR INSTALLATION OF THE EQUIPMENT AND MATERIALS. NO FACSIMILES OR FACSIMILE COPIES SHALL BE ACCEPTED.
3. ALL CONDUCTORS SHALL BE THW OR THWN COPPER. ALL EXPOSED CONDUITS SHALL BE RUN AS NEAT AS POSSIBLE. P.V.C. CONDUIT SHALL ONLY BE USED IN SLAB OR UNDERGROUND AT A MINIMUM DEPTH OF 24 INCHES.
4. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTION TO ALL VIBRATING EQUIPMENT SUCH AS MOTORS, ETC.
5. ALL ELECTRICAL EQUIPMENT SHALL BE APPROVED AS SAFE FOR USE IN THE U.S. WORKPLACE, AS PER A "NRTL" RECOGNIZED ORGANIZATION (U.L., C.S.A., ETC.)
6. ALL EQUIPMENT SHALL BE MOUNTED ABOVE FLOOD CRITERIA.
7. PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. NOTIFY THE ARCHITECT OR ENGINEER OF ANY DISCREPANCIES. THE CONTRACTOR SHALL QUALIFY THE BID ACCORDINGLY.
8. THE DESIGNATED NUMBERS ARE SHOWN ON THESE PLANS AS PER THE ORIGINAL DOCUMENTS OR SITE INVESTIGATION FOR THE EXISTING CONDITIONS AND ARE FOR IDENTIFICATION ONLY. CONTRACTOR SHALL VERIFY AND SHOW THE CIRCUIT NUMBERS ACTUALLY USED IN THE INSTALLATION ON THE "AS-BUILT" DRAWINGS.
9. CONTRACTOR SHALL WARRANT ALL WORK TO BE FREE OF DEFECT IN WORKMANSHIP AND MATERIALS FOR A PRIOR OF ONE YEAR AFTER ACCEPTANCE OF THE PROJECT.

ELECTRICAL NOTES:

1. ALL CONTRACTOR WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES
2. CONTRACTOR SHALL SEAL OFF CONDUIT RUNS
3. CONTRACTOR TO MOUNT LIGHTNING ARRESTOR AT SWITCH DISCONNECT
4. CONTRACTOR SHALL VERIFY POWER SOURCE PRIOR TO ORDERING EQUIPMENT
5. NEUTRAL TO BE SUPPLIED FOR 230V-3 PHASE POWER.

SYMBOLS LEGEND

- —G.F.I. RECEPTACLE 15 AMP/120 VOLT (TAMPER RESISTANT)
- J — JUNCTION BOX
- MOTOR

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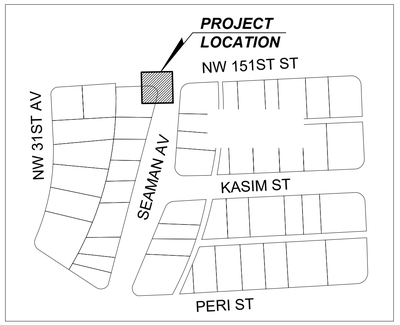
PROJECT NO.
202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

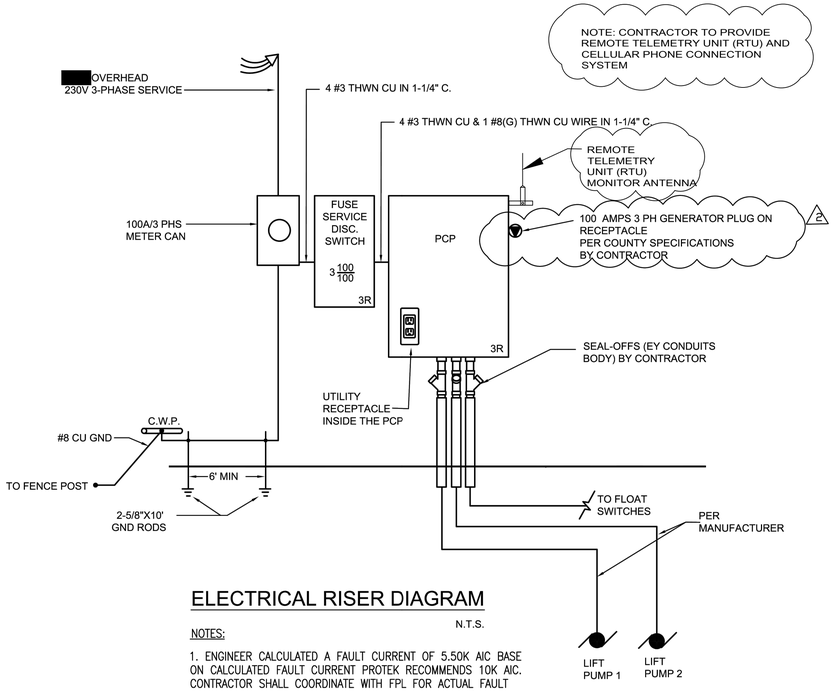
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO.
E-1



LOCATION MAP

N.T.S.

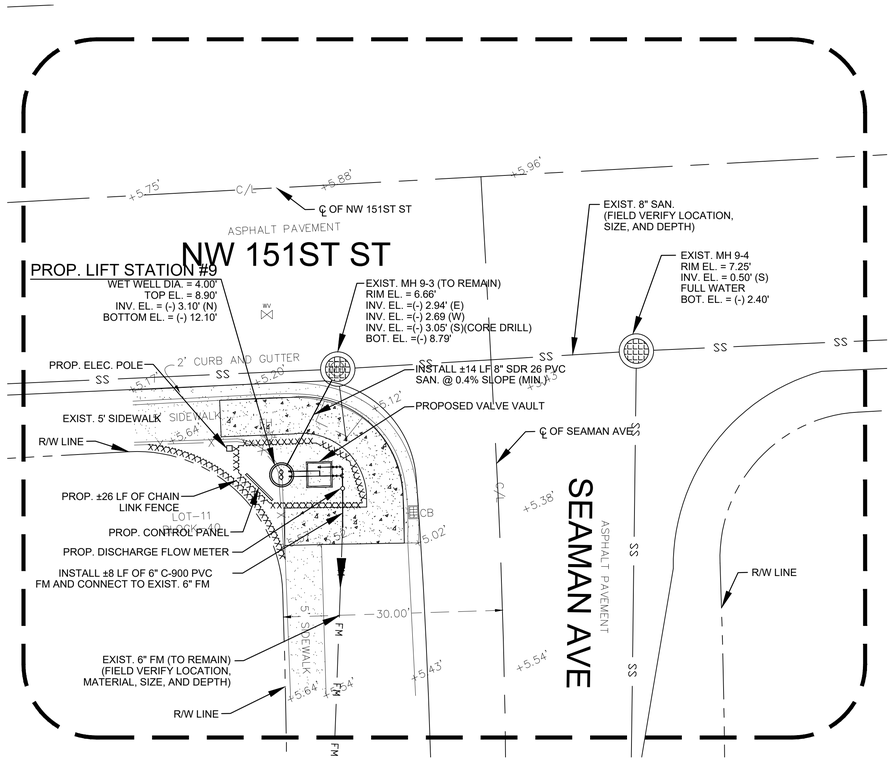


ELECTRICAL RISER DIAGRAM

N.T.S.

NOTES:

1. ENGINEER CALCULATED A FAULT CURRENT OF 5.50K AIC BASE ON CALCULATED FAULT CURRENT PROTEK RECOMMENDS 10K AIC. CONTRACTOR SHALL COORDINATE WITH FPL FOR ACTUAL FAULT CURRENT. EQUIPMENT INSTALLED SHALL WITHSTAND FPL'S AVAILABLE FAULT CURRENT. PRIOR TO ORDERING THE ELECTRICAL SWITCHGEAR THE CONTRACTOR SHALL OBTAIN FROM FPL A LETTER STATING THE AVAILABLE FAULT CURRENT. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO DO SO.
2. ALL EQUIPMENT TO BE MOUNTED ABOVE FLOOD CRITERIA.
3. COORDINATE NEW SERVICE REQUIREMENTS WITH FPL.



ELECTRICAL PLAN FOR LIFT STATION-9

1" = 10'

Assumed Fault Current Calculation

		kVA =	500		
		E =	240		
I = kVA x 1000 = trans. FLA / E x 1.732		trans. FLA =	1203		
Isca = trans. FLA x 100 / transformer Z =			1203 / 5 %		
Isca = ampere short-circuit current RMS symmetrical.		Isca =	24,057 amperes		
Fault Current from `	POINT TO POINT METHOD				
	Length (distance) FEET	L =	90	Three Phase 240/120	
	(ASC)	Isca =	24,057		
	# conductors per phase	N =	1	Copper in Nonmetallic Raceway	
	Phase conductor constant	C =	4,635	Phase Conductor	3
	Volt Line to Line	E L - L =	240 Volt		
'f ' factor = 1.732 x L x I / N x C x E L-N		f =	3.371		
	Neutral conductor constant	C =	4,635	Neutral Conductor	3
	Volt Line to Neutral	E L - N =	120 Volt		
		f =	6.741		
Multiplier M = 1 / 1 + f	Line to Line	M =	0.229		
	Line to Neutral	M =	0.129		
Isca x M = fault current at terminals of main disconnect L- L =			5,504 amperes		
Isca x M = fault current at terminals of main disconnect L- N =			3,108 amperes		

LIFT STATION LOAD TABULATION

SERVICE VOLTAGE: 120/240V. Ø

DESCRIPTION	LOAD	AMPACITY
① SUBMERSIBLE WASTEWATER PUMPS	2 @ 5 HP	= 14.60 A
CPT + SPARE PROVISIONS	10KVA	= 24.04 A
CONNECTED LOAD		= 38.64 A
② SERVICE ENTRANCE =	38.64 A + (0.25)(7.3)	= 40.46 A

NOTES:
① AMPACITIES PER TABLE 430-150 OF THE NATIONAL ELECTRIC CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRIC CODE.

NO.	REVISIONS	DATE	BY

SSN ENGINEERING, LLC
13899 BISCAYNE BLVD., STE 310
NORTH MIAMI BEACH, FL 33181
PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

PROJECT NO. 202201002

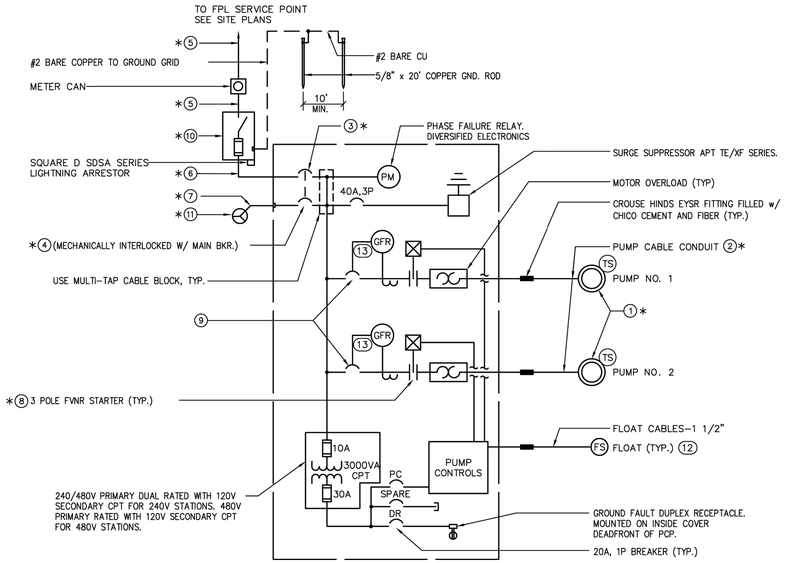
CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO. E-2

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NOTES:

(12) REFER TO CONTROL DIAGRAMS FOR EXACT NUMBER OF FLOAT SWITCHES REQUIRED.

(13) MOTOR CIRCUIT PROTECTOR WITH ADJUSTABLE MAGNETIC TRIN AND GROUND FAULT PROTECTION EQUIPMENT. OPENS MOTOR CIRCUIT PROTECTOR ON GROUND FAULT. PROVIDE ADDITIONAL ALARM CONTACT FOR COMMON ALARM INDICATION. GROUND FAULT CENSOR TYPE GC BY SQUARE D OR APPROVED EQUAL.

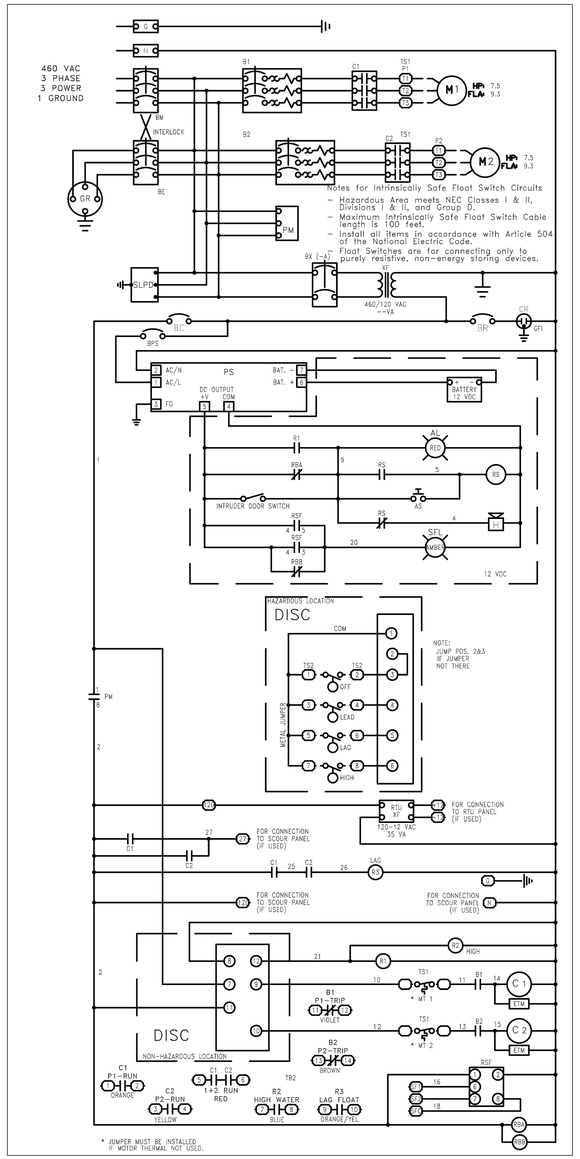
TYPICAL PUMP CONTROL PANEL (PCP) SINGLE LINE DIAGRAM

* ADDITIONAL REQUIREMENTS AND NUMERICAL DESIGNATIONS.

PCP CONTROL PANEL NOTES

CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR COMPLIANCE REVIEW AND APPROVAL BY OWNER / ENGINEER OF RECORD BEFORE INSTALLATION

			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
STATION NUMBER	SERVICE VOLTAGE	EXISTING MOTOR SIZE (HP)	NEW MOTOR SIZE (HP)	PUMP CABLE CONDUIT SIZE	PANEL MAIN BKR	EMERGENCY MAIN BKR.	SERVICE CONDUIT CONDUCTORS	LOAD CONDUIT AND CONDUCTORS	EMERGENCY CONDUCTORS	STARTER SIZE	MOTOR BREAKER	FUSED SERVICE DISCONNECT SWITCH/FUSES	GENERATOR RECEPTACLE
15	120/240V, 3Φ, 4W	UNKNOW	2 @ 5	2"	100A,3P	100A,3P	4#2-1 1/2"	3#2 & 1#6GND-1 1/2"	3#2 & 1#6GND	1	50A,3P	100A,3P/ 100A	SUPPLIED BY CONTRACTOR



DUPLEX CONTROL DIAGRAM

N.T.S.

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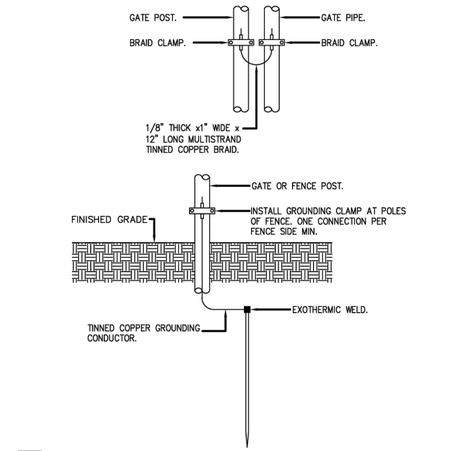
PROJECT NO. 202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

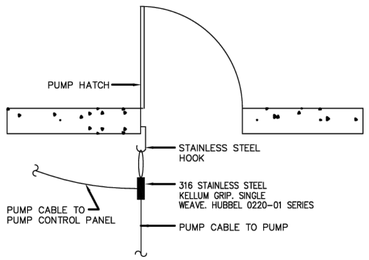
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO. E-3



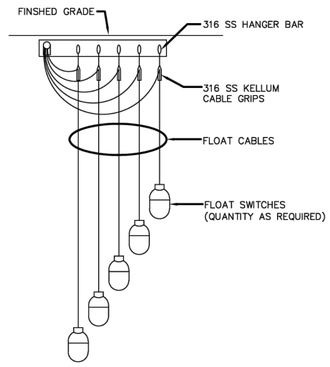
1 TYPICAL GATE OR FENCE POST GROUNDING

N.T.S.



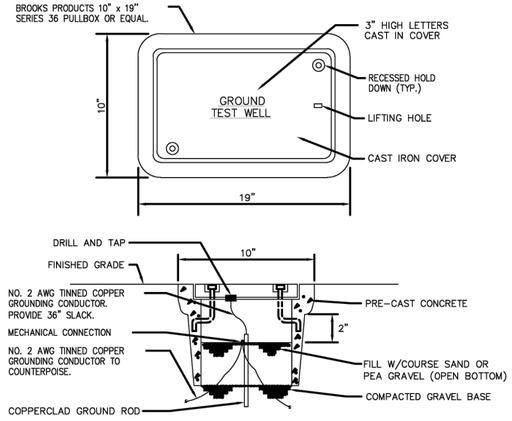
2 PUMP CABLE MOUNTING DETAIL

N.T.S.



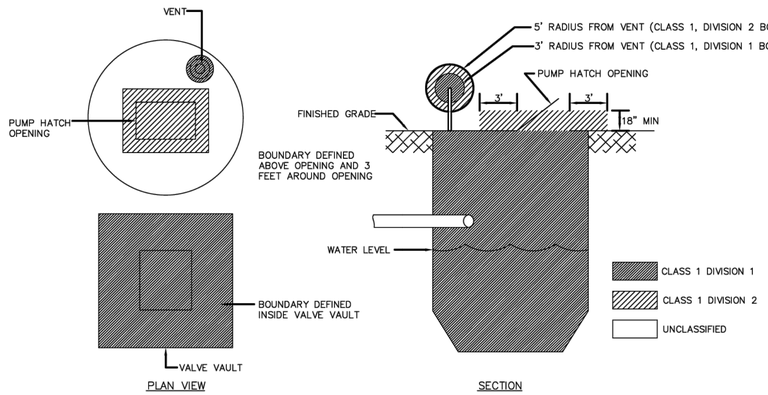
3 FLOAT SWITCH MOUNTING DETAIL

N.T.S.



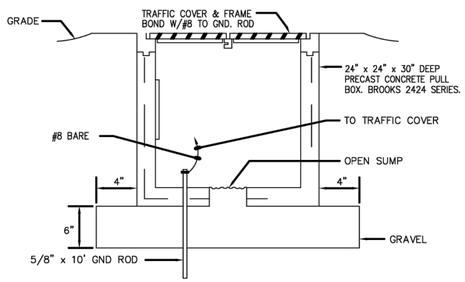
4 GROUND TEST WELL

N.T.S.



5 NFPA BOUNDARY CLASSIFICATION

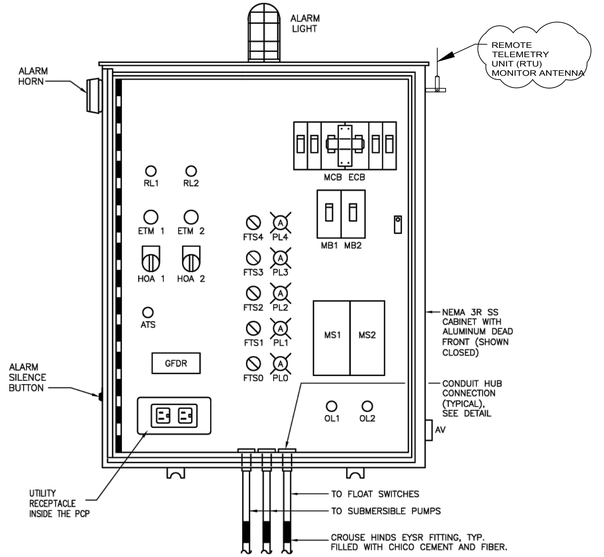
N.T.S.



6 PULL BOX DETAIL

N.T.S.

NOTE: CONTRACTOR TO PROVIDE REMOTE TELEMETRY UNIT (RTU) AND CELLULAR PHONE CONNECTION SYSTEM



NOTE: PANEL COVER NOT SHOWN

PUMP CONTROL PANEL FRONT VIEW

(TYPICAL FOR ALL LIFT STATIONS)

N.T.S.

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SSN ENGINEERING

PROJECT NO.

202201002

CITY OF OPA-LOCKA
LIFT STATION 9 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
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DATE: 09-05-2022
SHEET NO.
E-4

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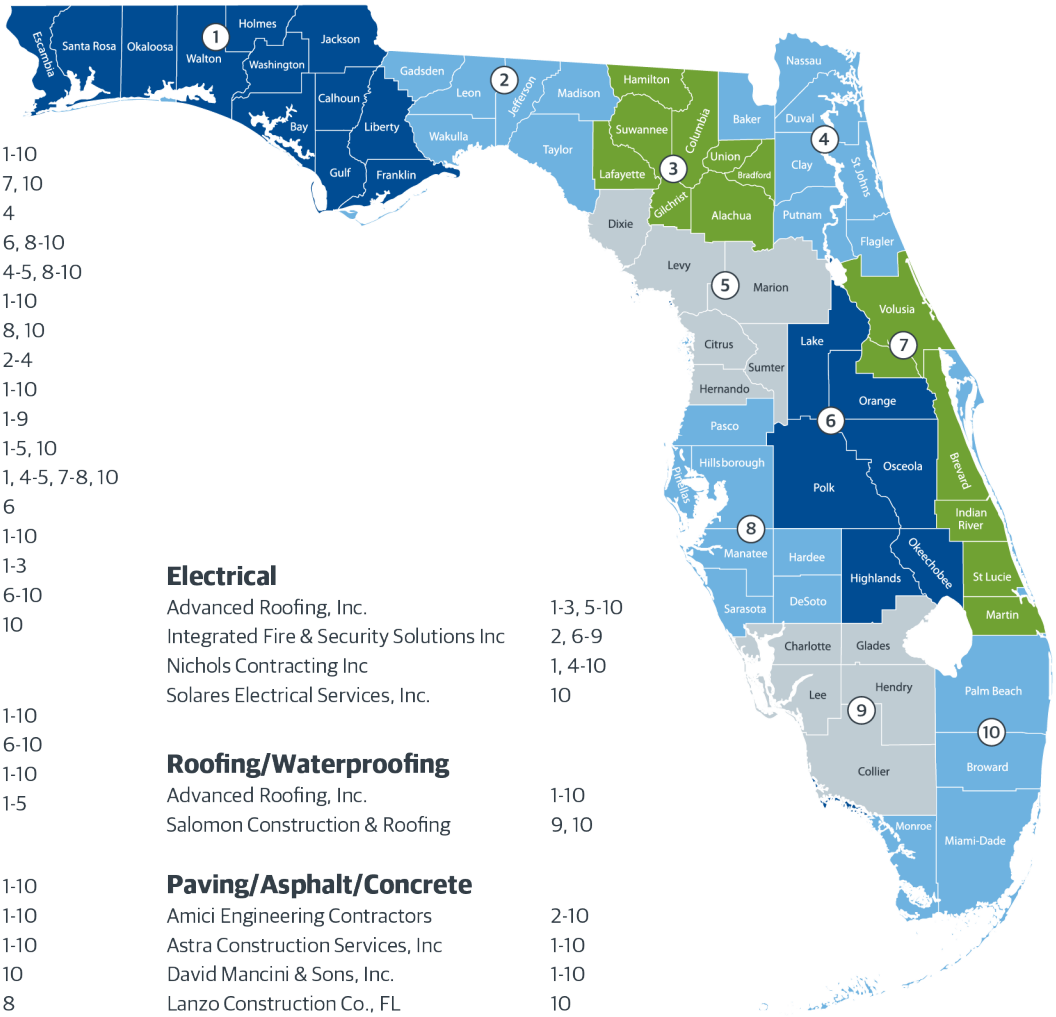
Sourcewell
Awarded Contract
Contract # 091620-GGI

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ezIQC is available in Florida via cooperative purchasing networks. ezIQC brings speed and efficiency to the construction procurement process by establishing local, competitively awarded prices upfront, eliminating the need to bid each project separately. Get started on your projects immediately with ezIQC.

Contractor Service Areas



General Contractor

Advanced Roofing, Inc.	1-10
Amici Engineering Contractors	7, 10
Astra Construction Services, LLC	4
Centennial Contractors Enterprises	6, 8-10
David Mancini & Sons, Inc.	4-5, 8-10
F.H. Paschen	1-10
Harbour Construction Inc.	8, 10
HCR Construction, Inc.	2-4
Jewel of the South, Inc.	1-10
JOC Construction LLC	1-9
Johnson-Laux Construction	1-5, 10
Nichols Contracting Inc.	1, 4-5, 7-8, 10
Ovation Construction Company	6
Place Services, Inc.	1-10
RAM Construction & Development, LLC	1-3
Shiff Construction & Development	6-10
Team Contracting, Inc.	10

HVAC/Mechanical

Advanced Roofing, Inc.	1-10
Hall Mechanical & Air Conditioning LLC	6-10
Mechanical Services of Central Florida, Inc.	1-10
Millers Plumbing & Mechanical, Inc.	1-5

Civil Construction

Amici Engineering Contractors	1-10
Astra Construction Services, Inc	1-10
David Mancini & Sons, Inc.	1-10
Lanzo Construction Co., FL	10
McKenzie Contracting LLC	8

Electrical

Advanced Roofing, Inc.	1-3, 5-10
Integrated Fire & Security Solutions Inc	2, 6-9
Nichols Contracting Inc	1, 4-10
Solares Electrical Services, Inc.	10

Roofing/Waterproofing

Advanced Roofing, Inc.	1-10
Salomon Construction & Roofing	9, 10

Paving/Asphalt/Concrete

Amici Engineering Contractors	2-10
Astra Construction Services, Inc	1-10
David Mancini & Sons, Inc.	1-10
Lanzo Construction Co., FL	10

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IFB #111821
Invitation for Bids
for
Indefinite Delivery-Indefinite Quantity
Construction Contracts
in the
State of Florida

Bid Due Date: November 18, 2021, 4:30 p.m., Central Time

Sourcewell, a State of Minnesota local government entity and public agency, is issuing this Invitation for Bid (IFB) on behalf of its participating entities to create indefinite delivery-indefinite quantity construction (IDIQ) contracts that may be used by those participating entities for projects related to construction or the repair, alteration, modernization, or renovation of buildings, structures, or other real property.

This IFB consists of the following parts:

1. Invitation for Bids, including Table of Solicitations and Map of Service Regions
2. Template IDIQ Construction Contract
3. IDIQ Contract General Terms and Conditions
4. Construction Task Catalog
5. Technical Specifications

A full copy of the IFB can be found on the Sourcewell Procurement Portal (https://proportal.sourcewell-mn.gov), and only bids submitted through the Sourcewell Procurement Portal will be considered. Bids are due no later than November 18, 2021 at 4:30 p.m. Central Time, and late bids will not be considered.

Solicitation Schedule

Notice of Solicitation Published:	October 14, 2021
Pre-bid Conference:	October 28, 2021, 10:00 a.m., Central Time
Question Submission Deadline:	November 11, 2021, 4:30 p.m., Central Time
Bid Due Date:	**November 18, 2021**, 4:30 p.m., Central Time Late responses will not be considered.
Opening:	November 18, 2021, 6:30 p.m., Central Time. See Article VII. G. for more information.

I. ABOUT SOURCEWELL AND ITS PARTICIPATING ENTITIES

Sourcewell is a State of Minnesota local government agency and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) that facilitates a competitive public solicitation and contract award process for the benefit of its participating entities across the United States. Sourcewell's solicitation process complies with State of Minnesota law and policies.

Sourcewell's participating entities in the State of Florida may include:

- Federal and state government
- Cities, towns, and counties/parishes
- Education service cooperatives
- K-12 and higher education
- Tribal government
- Some nonprofit
- Other public entities

For a listing of current participating entities visit Sourcewell's website: https://www.sourcewell-mn.gov/sourcewell-for-vendors/agency-locator.

II. INDEFINITE DELIVERY-INDEFINITE QUANTITY CONSTRUCTION PROGRAM

Sourcewell is soliciting bids for its IDIQ construction program. IDIQ contracting offers participating entities access to competitively solicited and awarded contracts for construction projects related to repair, alteration, modernization, or renovation of buildings, structures, or other real property.

Sourcewell has engaged The Gordian Group, Inc. (Gordian) to provide management of its IDIQ construction program. In this role, Gordian provides support to Sourcewell in the administration of the program, including: preparing Construction Task Catalogs and related technical specifications, providing information management systems and licenses to contractors, training to contractors, administering fee collection, consulting services to Sourcewell, and assisting with proposal package or work order development. Participating Entities access Sourcewell IDIQ contracts resulting from this IFB through relevant purchasing authority, and work directly with Contractors awarded through this IFB.

Under IDIQ, an awarded Contractor furnishes management, labor, materials, equipment, and incidental design support needed to perform the work. Details of the program's operation can be found within the Contract, and General Terms and Conditions document included in this IFB.

III. REQUIRED BIDDER QUALIFICATIONS

In determining a Bidder's responsibility and ability to perform under a Contract, Sourcewell has the right to investigate and request information concerning the financial condition, experience record, personnel, equipment, facilities, principal business location and organization of the Bidder, the Bidder's record with environmental regulations, and the claims and litigation history of the Bidder. Sourcewell reserves the right to verify the Bidder's information and may request clarification from a Bidder.

A. A Bidder's business must be normally engaged in performing the type of work specified within this IFB and must have adequate organization, facilities, equipment, and personnel to ensure prompt and efficient service to a Sourcewell participating entity (as solely determined by Sourcewell).

B. Bidders responding to a General Construction solicitation must be willing and capable of providing all or a majority of the various types of construction work as specified in the Construction Task Catalog. Bidder may provide the work using its own forces or by using subcontractors.

C. Bidders responding to the **HVAC/Mechanical, Electrical, Roofing/Waterproofing, Paving/Asphalt/Concrete, and Civil Construction** solicitations will perform at least 51% of all contracted work with its own organization and forces. The percentage calculation does not include field superintendents or office management personnel.

IV. BID OVERVIEW AND PREPARATION INSTRUCTIONS

A. REQUESTED INDEFINITE DELIVERY-INDEFINITE QUANTITY CONSTRUCTION SERVICES. The IQC services specified in the table of solicitations listed below, include General Construction, HVAC/Mechanical, Electrical, Roofing/Waterproofing, Paving/Asphalt/Concrete, and Civil Construction. At this time, no specific projects have been identified; work and work volume from any resulting contract are not guaranteed. Specific description of work and summary of duties for each category of construction can be found in the Technical Specifications.

B. PREPARATION INSTRUCTIONS. Strict compliance with the following instructions is required for properly preparing a bid. Before submitting a bid, it is the responsibility of each Bidder to:

1) Examine the IFB Documents thoroughly;
2) Consider all applicable federal, state and local laws, regulations, ordinances, and procurement codes that may affect costs, progress, performance, or furnishing of a participating entity's work; and,
3) Notify Sourcewell of all conflicts, errors, or discrepancies in theu IFB Documents of which Bidder knows.

The submission of a Bid constitutes a representation by the Bidder to Sourcewell that it has complied with the above requirements and, that without exception, its Bid is premised upon performing and furnishing the Work required by this IFB.

Bidders should include all relevant information in its bid. Sourcewell cannot consider information that is not provided in the bid.

C. ESTIMATED CONTRACT VALUE AND USAGE. Based on past volume of similar contracts, the estimated annual value of each contract resulting from this IFB is as stated in the Table of Solicitations. Sourcewell anticipates considerable activity under the contract(s) awarded from this IFB; however, work and work volume from any resulting contract are not guaranteed.

V. BID PRICING

A. CONSTRUCTION TASK CATALOG AND ADJUSTMENT FACTOR. In order to evaluate bid pricing and the retain consistency within contract pricing, Sourcewell uses Gordian's proprietary Construction Task Catalog (CTC). The CTC as a comprehensive listing of specific repair and construction related Tasks, together with a specific unit of measurement and a pre-set unit price (Unit Price). All Unit Prices within the CTC are based on local labor, material, and equipment prices for the direct cost of construction.

Under this IFB, Bidders will offer price adjustments (Adjustment Factors) that will be applied to CTC Unit Prices. The Adjustment Factors represent either an increase to the present Unit Prices (such as 1.1000) or a decrease from the preset Unit Prices (such as 0.9800).

A participating entity's cost for a specific task will be determined by multiplying the preset Unit Prices by the appropriate quantities and by the appropriate Adjustment Factor (e.g., specific task cost = preset unit price in CTC * quantity needed * Adjustment Factor).

1) Each Bidder must submit 3 Adjustment Factors to be applied to every task in the CTC. The bid must be either an adjustment "decrease from" (e.g. 0.9800) or "increase to" (e.g. 1.1000) the Unit Prices listed in the CTC.
2) The Bidder's Adjustment Factors must include all of the Bidder's direct and indirect costs. This includes, but is not limited to, its costs for overhead, profit, bond premiums above the reimbursable amount, insurance, mobilization, purchase order proposal development, and all contingencies in connection therewith. See pages 00t-1 – 00-6 of the CTC for a complete explanation of what is and is not included in the Unit Prices.
    a. *The first Adjustment Factor* will be applied to work to be accomplished during Normal Working Hours.
    b. *The second Adjustment Factor* will be applied to work to be accomplished during Other Than Normal Working Hours.
    c. *The third Adjustment Factor* will be for work tasks not identified in the Construction Task Catalog. IQCC includes a provision for establishing of prices for Work requirements which are within the general scope of IQCC but were not included in the CTC at the time of Contract award. These Tasks are referred to as "Non Pre-priced Tasks (NPP)." NPP Tasks may require new specifications and drawings and may subsequently be incorporated into the CTC. The bidders will offer an Adjustment Factor to be applied to the actual material, equipment, and labor cost for NPP work Tasks.

3) Adjustment Factors must be specified to the fourth decimal place. For example:

1	**.**	**1**	**0**	**0**	**0**

Or

0	**.**	**9**	**8**	**0**	**0**

4) For bid evaluation purposes only, the following weighing of the Adjustment factors will be used to determine the Combined Adjustment Factor. Complete the following information within the Sourcewell Procurement Portal:

Adjustment Factors	Weight
NORMAL WORKING HOURS PROJECTS	60%
OTHER THAN NORMAL WORKING HOURS PROJECTS	30%
NON-PRE-PRICED	10%

B. ADMINISTRATIVE FEES. Awarded contractors must pay an administrative fee in exchange for the administration of the contracts by Sourcewell and Sourcewell's contract administrator, Gordian. The bidder must include the administrative fee in calculating the Contractor's Adjustment Factors.

Detailed information about Sourcewell's administrative fee can be found in the Contract, and General Terms and Conditions.

VI. CONTRACT

Bidders awarded a contract will be required to execute the Contract (including its General Terms and Conditions) attached to this IFB.

VII. BIDDING PROCESS

A. PRE-BID CONFERENCE. Sourcewell will hold a non-mandatory pre-bid conference via webcast on the date and time noted in the Solicitation Schedule and on the Sourcewell Procurement Portal. The purpose of this conference is to allow potential bidders to ask questions regarding this IFB. Information about the webcast will be sent to all entities that have registered for this solicitation opportunity through their Sourcewell Procurement Portal Vendor Account. Pre-bid conference attendance is optional but highly encouraged.

B. QUESTIONS REGARDING THIS IFB AND ORAL COMMUNICATION. Any questions regarding this IFB must be submitted through the Sourcewell Procurement Portal. The deadline for submission of questions is found in the Solicitation Schedule and on the Sourcewell Procurement Portal. Answers to questions will be issued through an addendum to this IFB. Repetitive questions will be summarized into a single answer and identifying information will be removed from the submitted questions.

All questions, whether specific to a Bidder or generally related to the IFB, must be submitted using this process. Do not contact individual Sourcewell staff to ask questions or request information as this may disqualify the Bidder from responding to this IFB. Sourcewell will not respond to questions submitted after the deadline.

C. ADDENDA. Sourcewell may modify this IFB; however, no Addenda will be issued later than 5 days prior to the Bid Due Date, except an Addendum that withdraws or postpones this IFB. Addenda issued by Sourcewell become a part of the IFB and will be delivered to potential Bidders through the Sourcewell Procurement Portal. Sourcewell accepts no liability in connection with the delivery of any addenda.

Before a bid will be accepted through the Sourcewell Procurement Portal, all addenda, if any, must be acknowledged by the Bidder by checking the box for each addendum. It is the responsibility of the Bidder to check for any addenda that may have been issued up to the solicitation due date and time.

If an addendum is issued after a Bidder submitted its Bid, the Sourcewell Procurement Portal will WITHDRAW the submission and change the Bidder's Bid status to INCOMPLETE. The Bidder can view this status change in the "MY BIDS" section of the Sourcewell Procurement Portal Vendor Account. The Bidder is solely responsible to check the "MY BIDS" section of the Sourcewell Procurement Portal Vendor Account periodically after submitting its Bid (and up to the Bid due date). If the Bidder's Bid status has changed to INCOMPLETE, the Bidder is solely responsible to:

1) make any required adjustments to its bid,
2) acknowledge the addenda, and
3) ensure the re-submitted bid is received through the Sourcewell Procurement Portal no later than the Bid Due Date and time shown in the Solicitation Schedule above.

D. BID SUBMISSION. Bidder's complete bid must be submitted through the Sourcewell Procurement Portal no later than the date and time specified in the Solicitation Schedule and on the Sourcewell Procurement Portal. Any other form of bid submission, whether electronic, paper, or otherwise, will not be considered by Sourcewell. Late bids will not be considered. It is the Bidder's sole responsibility to ensure that the bid is received on time. To ensure receipt of the latest information and updates via email regarding this solicitation, or if the Bidder has obtained this IFB from a third party, the onus is on the Bidder to create a Sourcewell Procurement Portal Vendor Account and register for this solicitation opportunity.

Within the Procurement Portal, all bids must be digitally acknowledged by an authorized representative of the Bidder attesting that the information contained in in the bid is true and accurate. By submitting a bid, Bidder warrants that the information provided is true, correct, and reliable for purposes of evaluation for potential contract award. The submission of inaccurate, misleading, or false information is grounds for disqualification from a contract award and may subject the Bidder to remedies available by law.

It is recommended that Bidders allow sufficient time to upload the bid and to resolve any issues that may arise. The time and date that a bid is received by Sourcewell is solely determined by the Sourcewell Procurement Portal web clock. In the event of problems with the Sourcewell Procurement Portal, follow the instructions for technical support posted in the portal. It may take up to 24 hours to respond to certain issues.

Upon successful submission of a bid, the Portal will automatically generate a confirmation email to the Bidder. If the Bidder does not receive a confirmation email, contact Sourcewell's support provider at support@bidsandtenders.ca.

E. GENERAL BID REQUIREMENTS. Bids must be:

- In substantial compliance with the requirements of this IFB or it will be considered nonresponsive and be rejected
- Complete–a bid will be rejected if it is conditional or incomplete
- Submitted in English
- Valid and irrevocable for 180 days following the Bid Due Date

Any and all costs incurred in responding to this IFB will be borne by the Bidder.

F. BID MODIFICATION WITHDRAWAL. A submitted bid may not be modified, withdrawn, or cancelled by the Bidder for a period of 180 calendar days following the time and date designated for the receipt of bids. Prior to the deadline for submission of bids, any bid submitted may be modified or withdrawn through the Sourcewell Procurement Portal.

G. OPENING. The Opening of Bids will be conducted electronically through the Sourcewell Procurement Portal. A list of all Bidders will be made publicly available in the Sourcewell Procurement Portal after the Bid Due Date, but no later than the Opening time listed in the Solicitation Schedule.

To view the list of Bidders, verify that the Sourcewell Procurement Portal opportunities list search is set to "All" or "Closed." The solicitation status will automatically change to "Closed" after the Bid Due Date and Time.

VIII. EVALUATION AND AWARD

A. EVALUATION. Only responsive bids will be evaluated. A responsive bid must have been submitted on time and materially satisfy all mandatory requirements identified in this IFB. Deviations or exceptions stipulated in Bidder's response, while possibly necessary in the view of the Bidder, may result in disqualification.

B. AWARD(S). It is the intent of Sourcewell to award each Contract to the lowest, responsive, responsible Bidder(s) based on the Combined Adjustment Factor as calculated by Sourcewell within each Service Region.

A Bidder will not be awarded more than one same scope Contract within any Service Region. In the event a Bidder submits the lowest bid on more than one Solicitation, Sourcewell will determine which Contract will be awarded to which Bidder based on the combination of bids resulting in the lowest overall cost to the Sourcewell Participating Entities.

Sourcewell retains the right to waive any informality in a Bidder's response. Sourcewell reserves the right to reject all bids and advertise again if, in Sourcewell's opinion, the bids received do not meet or exceed the minimum needs and expectations of Sourcewell and its participating entities. Sourcewell reserves the right to award additional Contracts from this solicitation up to 180 calendar days after the close of the IFB.

Competitive Range. If Sourcewell receives a wide margin of bid Adjustment Factors, either too high or too low, then the Sourcewell Bid evaluation committee may establish a Competitive Range for the IFB. If it is determined that a Bidder's Combined Adjustment Factor is too far outside the Competitive Range, then the Bidder can be removed from consideration. The Bidder will be notified that it was determined to be outside the Competitive Range after award of the contracts.

Unbalanced Bid. A Bid may be removed from consideration if it is determined that the Bidder has mathematically unbalanced its Bid to gain a competitive advantage. The Bid will be considered to be unbalanced if any Adjustment Factor is found to not cover the contractor's reasonable actual cost. Those costs would include a reasonable prorated share of its anticipated profit, overhead cost, and other indirect costs that the bidder anticipates for the performance of the work as determined by the Sourcewell Bid Review Committee.

Other Than Normal Working Hours Adjustment Factors. A Bidder's Other Than Normal Working Hours Adjustment Factors must be higher or equal to its Normal Working Hours Adjustment Factors.

IX. ASSIGNMENT OF WORK

See the Contract, and General Terms and Conditions for a detailed description of how work will be assigned.

X. PROTESTS OF AWARDS

Any protest made under this IFB by a Bidder must be in writing, addressed to Sourcewell's Executive Director, and delivered to the Sourcewell office located at 202 12th Street NE, P.O. Box 219, Staples, MN 56479. All documents that comprise the complete protest package must be received no later than 10 calendar days following Sourcewell's notice of contract award(s) or non-award and must be time stamped by Sourcewell no later than 4:30 p.m., Central Time.

A protest must allege a procedural or technical defect, with supporting documentation. A request for re-evaluation of a bid's content will not be entertained.

A protest must include the following items:

- The name, address, and telephone number of the protester
- The original signature of the protester or its representative
- Identification of the solicitation by IFB number
- A precise statement of the relevant facts
- Identification of the alleged breakdown in procedure or technical issues
- Identification of the legal or factual basis
- Any additional supporting documentation
- Protest bond in the amount of $20,000, except where prohibited by law or treaty

Protests that do not address these elements will not be reviewed.

XI. RIGHTS RESERVED

This IFB does not commit Sourcewell to award any contract, and a bid may be rejected if it is nonresponsive, conditional, incomplete, conflicting, or misleading. Bids that contain false statements or do not support an attribute or condition stated by the Bidder may be rejected.

Sourcewell reserves the right to:

- Modify or cancel this IFB at any time
- Reject any and all bids received
- Reject bids that do not comply with the provisions of this IFB
- Independently verify any information provided in a Bid
- Disqualify any Bidder that does not meet the requirements of this IFB, is debarred or suspended by the United States or Canada, State of Minnesota, participating entity's state; has an officer, or other key personnel, who have been charged with a serious crime; or is bankrupt, insolvent, or where bankruptcy or insolvency are a reasonable prospect;
- Waive or modify any informalities, irregularities, or inconsistencies in the bids received
- Clarify any part of a bid

- Award a contract if only one responsive bid is received if it is in the best interest of participating entities
- Award a contract to one or more Bidders if it is in the best interest of participating entities

XII. DISPOSITION OF BIDS

All materials submitted in response to this IFB will become property of Sourcewell and will become public record in accordance with Minnesota Statutes Section 13.591. It is the Bidder's responsibility to clearly identify any data submitted that it considers to be protected. Bidder must also include a justification for the classification citing the applicable Minnesota law.

Sourcewell will not consider the prices submitted by the Bidder to be confidential, proprietary, or trade secret materials. Financial information, including financial statements, provided by a Bidder is not considered trade secret under the statutory definition.

The Bidder understands that Sourcewell will reject bids that are marked confidential nonpublic, either substantially or in their entirety.

[Table of Solicitations and Map of Service Regions to Follow]

Table of Solicitations for
Indefinite Delivery-Indefinite Quantity Construction Contracts in the State of Florida IFB #FL-111821

Solicitation Trade / Solicitation Number	Service Region	Estimated Annual Value
General Construction FL-R1-GC01-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC02-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC03-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC04-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC05-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC06-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC07-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC08-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC01-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC02-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC03-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E01-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E02-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E03-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-RW01-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-R02-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-R03-111821	**Region 1 – Northwest Florida**	2 Million
Paving/Asphalt/Concrete FL-R1-PAC01-111821	**Region 1 – Northwest Florida**	2 Million

Paving/Asphalt/Concrete FL-R1-PAC02-111821	**Region 1 – Northwest Florida**	2 Million
Paving/Asphalt/Concrete FL-R1-PAC03-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC01-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC02-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC03-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R2-GC01-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC02-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC03-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC04-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC05-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC06-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC07-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC08-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC01-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC02-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC03-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E01-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E02-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E03-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW01-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW02-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW03-111821	**Region 2- North Central West Florida**	2 Million
Paving/Asphalt/Concrete FL- R2-PAC01-111821	**Region 2- North Central West Florida**	2 Million
Paving/Asphalt/Concrete FL- R2-PAC02-111821	**Region 2- North Central West Florida**	2 Million

Paving/Asphalt/Concrete FL- R2-PAC03-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC01-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC02-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC03-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL-R3-GC01-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC02-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC03-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC04-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC05-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC06-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC07-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC08-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC01-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC02-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC03-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E01-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E02-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E03-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW01-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW02-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW03-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC01-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC02-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC03-111821	**Region 3 – North Central East Florida**	2 Million

Civil Construction FL-R3-CC01-111821	**Region 3 – North Central East Florida**	2 Million
Civil Construction FL-R3-CC02-111821	**Region 3 – North Central East Florida**	2 Million
Civil Construction FL-R3-CC03-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R4-GC01-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC02-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC03-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC04-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC05-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC06-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC07-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC08-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC09-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC010-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC01-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC02-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC03-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E01-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E02-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E03-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW01-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW02-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW03-111821	**Region 4 – Northeast Florida**	2 Million
Paving/Asphalt/Concrete FL-R4-PAC01-111821	**Region 4 – Northeast Florida**	2 Million
Paving/Asphalt/Concrete FL-R4-PAC02-111821	**Region 4 – Northeast Florida**	2 Million

Paving/Asphalt/Concrete FL-R4-PAC03-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC01-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC02-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC03-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R5-GC01-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC02-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC03-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC04-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC05-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC06-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC07-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC08-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC01-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC02-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC03-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E01-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E02-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E03-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW01-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW02-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW03-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC01-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC02-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC03-111821	**Region 5 – Central West Florida**	2 Million

Civil Construction FL-R5-CC01-111821	**Region 5 – Central West Florida**	2 Million
Civil Construction FL-R5-CC02-111821	**Region 5 – Central West Florida**	2 Million
Civil Construction FL-R5-CC03-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R6-GC01-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC02-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC03-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC04-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC05-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC06-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC07-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC08-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC01-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC02-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC03-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E01-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E02-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E03-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW01-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW02-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW03-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC01-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC02-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC03-111821	**Region 6 – Central Florida**	2 Million
Civil Construction FL-R6-CC01-111821	**Region 6 – Central Florida**	2 Million

Civil Construction FL-R6-CC02-111821	**Region 6 – Central Florida**	2 Million
Civil Construction FL-R6-CC03-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R7-GC01-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC02-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC03-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC04-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC05-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC06-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC07-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC08-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC01-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC02-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC03-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E01-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E02-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E03-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW01-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW02-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW03-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC01-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC02-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC03-111821	**Region 7 – Central East Florida**	2 Million
Civil Construction FL-R7-CC01-111821	**Region 7 – Central East Florida**	2 Million
Civil Construction FL-R7-CC02-111821	**Region 7 – Central East Florida**	2 Million

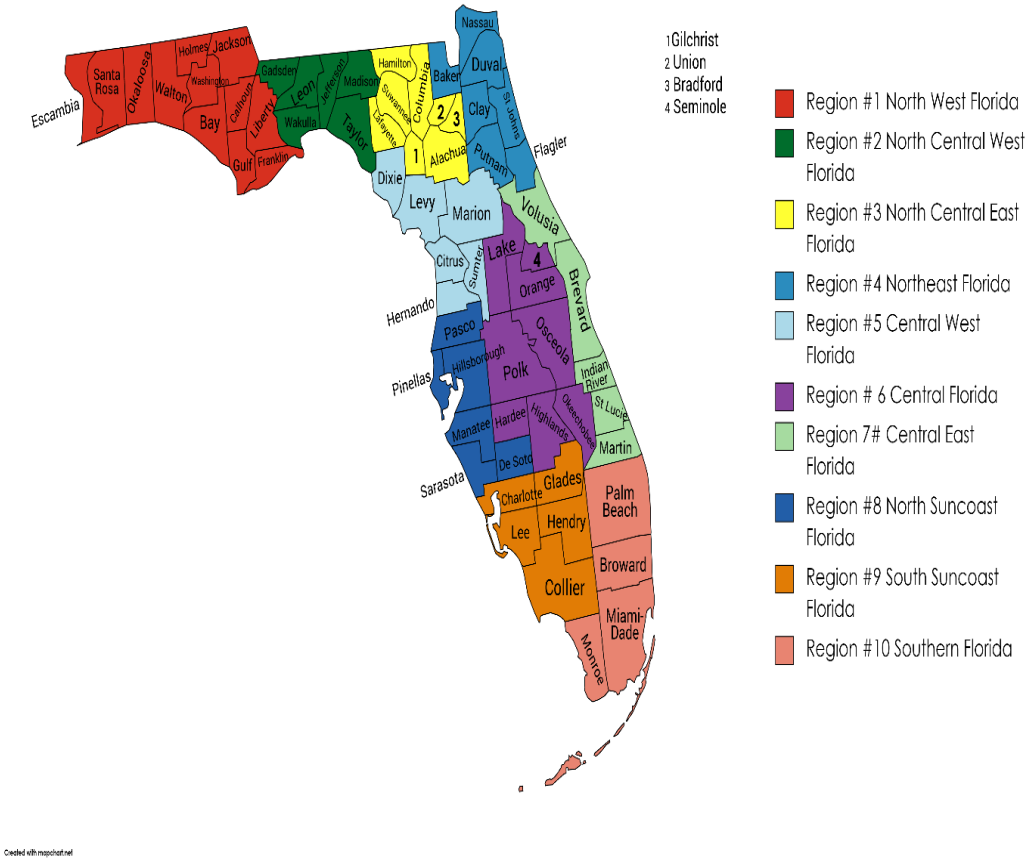
Civil Construction FL-R7-CC03-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R8-GC01-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC02-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC03-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC04-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC05-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC06-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC07-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC08-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC09-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC10-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC01-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC02-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC03-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E01-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E02-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E03-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW01-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW02-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW03-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW04-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC01-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC02-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC03-111821	**Region 8 – North Suncoast Florida**	2 Million

Paving/Asphalt/Concrete FL-R8-PAC04-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC01-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC02-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC03-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC04-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R9-GC01-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC02-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC03-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC04-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC05-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC06-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC07-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC08-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC01-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC02-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC03-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E01-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E02-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E03-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW01-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW02-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW03-111821	**Region 9 – South Suncoast Florida**	2 Million
Paving/Concrete/Asphalt FL-R9-PAC01-111821	**Region 9 – South Suncoast Florida**	2 Million
Paving/Concrete/Asphalt FL-R9-PAC02-111821	**Region 9 – South Suncoast Florida**	2 Million

Paving/Concrete/Asphalt FL-R9-PAC03-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC01-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC02-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC03-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R10-GC01-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC02-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC03-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC04-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC05-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC06-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC07-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC08-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC09-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC10-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC11-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC12-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC01-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC02-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC03-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E01-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E02-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E03-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW01-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW02-111821	**Region 10 – Southern Florida**	2 Million

Roofing/Waterproofing FL-R10-RW03-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW04-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC01-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC02-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC03-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC04-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC01-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC02-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC03-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC04-111821	**Region 10 – Southern Florida**	2 Million

MAP OF
SOURCEWELL CONTRACT
SERVICE REGIONS
Indefinite Delivery-Indefinite Quantity
Construction Contracts
in the
State of Florida
IFB #FL-111821



Region 1 Northwest Florida

Escambia	Santa Rosa	Okaloosa	Walton
Holmes	Jackson	Washington	Bay
Calhoun	Liberty	Gulf	Franklin

Region 2 North Central West Florida

Gadsden	Leon	Wakulla	Jefferson
Madison	Taylor		

Region 3 North Central East Florida

Hamilton	Suwannee	Lafayette	Columbia
Gilchrist	Union	Bradford	Alachua

Region 4 Northeast Florida

Nassau	Baker	Duval	Clay
St Johns	Putnam	Flagler	

Region 5 Central West Florida

Dixie	Levy	Marion	Citrus
Cumter	Hernando		

Region 6 Central Florida

Lake	Seminole	Orange	Osceola
Polk	Hardee	Highlands	Okeedhobee

Region 7 Central East Florida

Volusia	Brevard	Indian River	St Lucie
Martin			

Region 8 North Suncoast Florida

Pasco	Hillsborough	Pinellas	Manatee
Sarasota	De Soto		

Region 9 South Suncoast Florida

Charlotte	Glades	Lee	Hendry
Collier			

Region 10 Southern Florida

Palm Beach	Broward	Miami Dade	Monroe

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SOURCEWELL
PROFESSIONAL SERVICES AGREEMENT

THIS PROFESSIONAL SERVICES AGREEMENT is by and between **Sourcewell**, 202 12th Street Northeast, PO Box 219, Staples, MN 56479 and **The Gordian Group, Inc.**, 30 Patewood Drive, Suite 350, Greenville, SC 29615 (Gordian).

Sourcewell is in need of a vendor to perform services related to the ongoing management of its indefinite delivery/indefinite quantity construction contracting program for the benefit of Sourcewell participating entities (Services). Gordian is qualified and willing to perform the services described in this Agreement.

ARTICLE 1: TERM

A. **Term**. This Agreement will be effective September 16, 2020, and will remain in effect through October 1, 2025, unless earlier terminated pursuant to the terms of this Agreement. The Agreement may be extended by mutual agreement of the parties.

B. **Survival**. Notwithstanding any expiration or termination of this Agreement, all payment obligations incurred prior to expiration or termination will survive, as will the following: Articles 8 and 9. All other rights will cease upon expiration or termination of this Agreement.

ARTICLE 2: GORDIAN'S DUTIES

Gordian will have the following duties and responsibilities in performing the services for Sourcewell (Services):

A. **Program Support**: Gordian will be responsible for the on-going support of the Sourcewell indefinite delivery/indefinite quantity construction contracting program (currently referred to as the Sourcewell ezIQC program).

B. **EZIQC Contract Administration**: Gordian will be responsible for assisting Sourcewell in the procurement of the contracts of Sourcewell-awarded EZIQC Contractors including:

1. Unit Price Book(s): For each Sourcewell EZIQC contract solicitation Gordian will prepare one or more customized Unit Price Books (also known as a Construction Task Catalog®) containing prices covering material, equipment and labor costs for various units of construction, and adjusting these costs to current market conditions and targeted geographies for the advertising and award of Sourcewell's EZIQC Contracts. Sourcewell and Gordian will mutually agree on the number of Unit Price Books included in each EZIQC Contract solicitation, and the number of geographic regions associated with each

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solicitation. All unit price books will be provided in electronic, read-only format and may only be distributed in the same format.

2. Technical Specifications: Gordian will prepare and publish Technical Specifications describing the materials, performance and installation requirements for each of the construction tasks listed in the Unit Price Book. All Technical Specifications will be provided in electronic, read-only format and may only be distributed in the same format.

3. Contractual Terms and Conditions and Bid Forms: Gordian will provide technical assistance to Sourcewell staff, as requested, in the preparation of contractual terms and conditions, and bid forms, which incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Gordian will have final approval of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Participating Entities; payment terms; and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

4. Vendor Outreach and Development Support: Gordian will be responsible to develop a prospective vendor outreach list and make vendor outreach contacts via phone, email, virtual on-line, and in-person visits to potential Sourcewell solicitation respondents. Vendor development efforts will include distribution of Sourcewell marketing collateral developed and approved by Sourcewell. All vendor outreach efforts will be concluded, and all contact between Gordian and prospective vendors will be concluded on or before each solicitation's "Quiet Period" established by the Sourcewell Procurement Department. Sourcewell Procurement will provide reasonable advanced notice of the for the "Quiet Period" for each EZIQC Contract Solicitation, with the goal of providing notice no later than 10 days from the initiation of such Quiet Period. From the commencement of the Quiet Period until the announcement of contract awards by the Sourcewell Evaluation Committee, Gordian will cease communication with prospective respondents related to the solicitation and will immediately refer all inquiries to the Sourcewell Procurement Portal as the exclusive platform for submission of questions or communications related to the solicitation.

5. Procurement Support: Gordian will be responsible for providing Sourcewell with procurement support during the procurement of EZIQC Contracts, including advising Sourcewell on the appropriate method, duration, and publications for advertising each EZIQC Contract solicitation in the applicable jurisdictions. At the request of Sourcewell Procurement, and in light of COVID-19 pandemic restrictions implemented by various jurisdictions, Gordian will provide a recorded video presentation to be shared by Sourcewell during pre-bid meetings with interested bidders relating to the calculation of adjustment factors, the interpretation of the Unit Price Book, and other subject matter as deemed necessary by the parties. Gordian will make other presentations with and on behalf of Sourcewell relating to the EZIQC Program and solicitation process, including contractor

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training sessions, as deemed necessary by the parties. Sourcewell Procurement will determine if and when pre-recorded video presentations will be implemented, modified, or terminated.

6. Evaluation and Award: Sourcewell's Evaluation Committee will be responsible for all EZIQC Contract award determinations. Upon request, Gordian will provide technical assistance to the Sourcewell evaluation committee. Any Gordian participation in the Evaluation Committee will require compliance with Sourcewell's procurement protocols, in particular to those related to the handling and classification of government data and government procurement standards.

7. Standard Work: Gordian will work with Sourcewell in a mutually approved standard process for the execution of the EZIQC Contract solicitation process, such standard process will include, but not be limited to, the following tasks:

i. Initiation of a request for the solicitation of new EZIQC Contracts by either party;

ii. Comment on, and technical assistance with, the draft bid documents for Sourcewell solicitations, as requested by Sourcewell in timely manner;

iii. Development and delivery of pre-recorded video content and supporting materials necessary for pre-bid seminars to be conducted by Sourcewell, or in-person attendance at pre-bid conferences at the request of Sourcewell; and

iv. Technical assistance to the Sourcewell evaluation committee responsible for review, evaluation and award of EZIQC Contracts, as requested by Sourcewell.

C. **Information Management System**: Gordian will be responsible for providing the web-based JOC Information Management System (IMS) for an unlimited number of EZIQC Contractors for the purpose of executing work procured through the EZIQC Program. The JOC IMS must be capable of providing full project tracking, developing cost proposals, generating project documentation, providing project scheduling, tracking diverse supplier participation (W/MBE, SBE, and Veteran-Owned businesses), and generating standard program reports as requested by Sourcewell. Gordian will not be responsible for providing access to, or training on, the JOC IMS to Sourcewell or any Participating Entity in connection with the EZIQC Program.

D. **Onboarding and Training Programs**: Gordian will be responsible for developing and conducting all onboarding and training programs for the EZIQC Contractors to ensure that the EZIQC Program functions properly. Training and onboarding will be provided to newly-awarded Sourcewell EZIQC contractors within a reasonable time after contract award, with the goal of 30 days from the contract award date. Training will include sessions on the use of the JOC IMS, the Job Order development process, and the application and interpretation of the Construction Task Catalog. Onboarding sessions will include sales and marketing training, and associated marketing collateral as agreed upon by the parties. At the discretion of Gordian, such training and onboarding programs

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may be conducted onsite or via remote, web-based training sessions and will be conducted at Gordian's sole expense, excluding any expenses associated with Sourcewell's attendance of any training and onboarding sessions.

E. **Marketing Support**: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all associated marketing efforts relating to the EZIQC program. Gordian's designated marketing representative will be a member of the marketing department with primary responsibility for the marketing of the EZIQC Program. In addition, Gordian will:

1. Work with Sourcewell and exercise reasonable efforts to:

   i. Work with Sourcewell's designated representative to develop a joint marketing plan as agreed upon by both parties. The joint marketing plan may be amended, revised and updated as needed during the term of this Agreement with approval by both parties.

   ii. Will carry out Gordian's responsibilities under the joint marketing plan, as updated and amended by both parties, during the term of this Agreement;

   iii. Provide any marketing materials developed under the joint marketing plan to Sourcewell's designated marketing representative not less than 48 hours prior to publication. Sourcewell's failure to provide any objection to such marketing materials within 48 hours of receipt will be deemed an approval of such marketing materials;

   iv. Schedule and attend, not less than monthly, recurring calls with Sourcewell's designated marketing representative for continued coordination and collaboration on all marketing activities associated with the EZIQC Program including the Joint Marketing Plan; and,

   v. Provide a list of scheduled conferences and speaking engagements, updated monthly, which Gordian plans to attend and which relate to the promotion and marketing of the EZIQC Program.

2. Be responsible for all costs associated with marketing efforts initiated, assigned to, or otherwise carried out by Gordian unless otherwise set forth in this Agreement or the joint marketing plan.

F. **Job Order Initiation and Development**: Gordian will be responsible for providing the following Job Order Development services:

1. Project Identification and Initiation: Gordian will develop and maintain a web portal to enable Participating Entity to identify and request assistance with possible projects to be procured through the EZIQC Program. Gordian will respond to any Participating Entity

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requests for assistance within 48 hours of receipt of such request. Gordian will have the discretion to deny the requested assistance for any reason.

2. Contractor Identification: In the event the Participating Entity requests a Joint Scope Meeting to discuss the potential project, Gordian will provide the Participating Entity with a list of available EZIQC Contractors for the project based on factors which include, but are not limited to, the type of work involved, and the location of the project. The Participating Entity will be responsible for approving the selected EZIQC Contractor for the project.

3. Joint Scope Meeting: Gordian's project manager will schedule a Joint Scope Meeting at the project site to help the Participating Entity and the EZIQC Contractor agree on the details of the work that the EZIQC Contractor will perform. The purpose of the scoping process is to allow the EZIQC Contractor an opportunity to inspect the site and ask questions before submitting a Price Proposal.

4. Develop Detailed Scope of Work: Gordian will assist the Participating Entity and EZIQC Contractor with preparing a Detailed Scope of Work that describes the work the EZIQC Contractor will perform. Gordian will also assist with resolving issues when project plans and actual conditions vary.

5. Request for Price Proposal: After all parties are in agreement that the Detailed Scope of Work properly reflects the work to be performed, Gordian's project manager will send the Detailed Scope of Work and a Request for Proposal to the EZIQC Contractor.

6. Price Proposal Review: Gordian's project manager will review the Price Proposal to make sure the EZIQC Contractor has selected the appropriate tasks and quantities and will request the EZIQC Contractor to make any required changes to ensure the Price Proposal reflects the appropriate means and methods for accomplishing the Detailed Scope of Work. Gordian will also obtain and review any Participating Entity required information submitted by the EZIQC Contractor such as a construction schedule and list of proposed subcontractors. Gordian's project manager will submit the Price Proposal and related documents to Participating Entity.

7. Issue Job Order: Once the Participating Entity approves the Price Proposal and related documents, and decides to move forward with the project, Gordian will assist the Participating Entity with the issuance of a job order (which may be in the form of a purchase order, notice-to-proceed, or similar purchasing document) to the selected EZIQC Contractor to initiate the completion of the project.

8. Construction Process and Supplemental Job Orders: During construction, unless project management services are requested by the Participating Entity as set forth below, the Participating Entity's, project managers, or its designees, will be responsible for all construction management activities. In the event unforeseen conditions arise or Participating Entity desires to change the Detailed Scope of Work, Gordian will assist the

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Participating Entity with the development of a supplemental Job Order in the same manner as the original Job Order.

G. **On-Going Program Administration and Support**: Gordian will be responsible for providing program administration to Sourcewell during the term of the Agreement. On-going program administration will include providing updated contract documents, unit price books, assisting with the procurement of additional EZIQC Contractors utilizing the process outlined above, providing EZIQC Contractors with access to all applicable updates and revisions to the JOC IMS, and providing training for onboarding and training for all EZIQC Contractors. Gordian will provide telephone and web-based customer support to Participating Entities and EZIQC Contractors during the period of 8:30 a.m. EST to 10:00 p.m. EST, Monday thru Friday, excluding holidays.

H. **Accounting, Collections and Remittance of Administrative Fees**: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all associated invoicing and collection efforts relating to the EZIQC program. Gordian's designated accounting representative will be a member of the accounting department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Gordian will:

1. Invoice and collect all applicable fees from the EZIQC Contractors in accordance with the terms of Article VIII and will remit, via electronic payment, the Sourcewell Administrative Fee (as defined in Article VIII) on a monthly basis for all Sourcewell Administrative Fees collected during the preceding month.

   i. The parties agree that as a condition precedent to Gordian's obligation to remit the Sourcewell Administrative Fee, Gordian must first receive payment in full for the Gordian Administrative Fee (as defined in Article VIII). In the event Gordian does not receive payment of the Gordian Administrative Fee in full, for any reason, Gordian will not be liable to Sourcewell for payment of the Sourcewell Administrative Fee.

2. Provide Sourcewell with a monthly report detailing all Sourcewell Administrative Fees collected during the previous month including Sourcewell contract number, project names, project values, and the fees collected. The monthly report will be in the sales reporting template format developed and provided by Sourcewell.

3. Provide Sourcewell with a monthly report detailing all outstanding accounts receivable by EZIQC Contractor including the amount, date of accrual, and days outstanding for each invoice.

4. Gordian may initiate and control any litigation seeking any unpaid balances owed by any EZIQC Contractor, provided such unpaid balance exceeds $50,000.

I. **Vendor Performance Management Services**: Gordian will provide EZIQC Contractor performance management throughout the term of each Sourcewell awarded contract. The parties will mutually agree on a standard EZIQC Contractor performance assessment form for

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completion and delivery to Sourcewell, to be provided upon request from Sourcewell, not less than 30 days in advance of each EZIQC Contractor's annual contract anniversary date.

ARTICLE 3: SOURCEWELL DUTIES AND RESPONSIBILITIES

Sourcewell will perform the following duties and responsibilities to complete the Services:

A. **EZIQC Contract Procurement**:

1. Advertisement and Bid Documents: Sourcewell will be responsible for advertising, posting, and distributing the bid documents, contract documents, unit price books and all associated documentation related to the advertisement and award of the EZIQC Contracts. Sourcewell will be responsible for conducting all activities, and paying any expenses required, to ensure the appropriate advertisement of the EZIQC Contract solicitations in each applicable jurisdiction.

2. Pre-bid Seminars: Sourcewell will be responsible for scheduling and hosting any pre-bid seminars conducted as part of the solicitation of any EZIQC Contracts, and will be responsible for any expenses associated therewith, excluding any expenses associated with preparation of Gordian's recorded video presentation to be shared during such pre-bid seminars. At Sourcewell's sole discretion, pre-bid seminars may be conducted in-person, or remotely via video-enabled webinars. Sourcewell Procurement reserves the right to invite a Gordian representative, at Gordian's sole expense, to attend the pre-bid conference either in-person or via the video-enabled webinar.

3. Contractual Terms and Conditions and Bid Forms: Sourcewell will prepare contractual terms and conditions, and bid forms, that incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Gordian will have final approval of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Participating Entities, payment terms, and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

4. Evaluation and Award: Sourcewell will designate the committee responsible for evaluating and awarding the EZIQC Contracts.

5. Standard Work: Sourcewell will exercise reasonable efforts in a mutually approved standard process for the execution of the EZIQC Contract solicitation process, such standard process will include, but not be limited to, the following tasks:

i. Initiation of a request for the solicitation of new EZIQC Contracts by either party, with Sourcewell retaining the final determination on issuance of the solicitation and the

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geographic scope of the solicitation (whenever possible, Sourcewell intends to solicit for EZIQC Contracts across an entire state);

ii. Execution of the advertisement, evaluation and award of EZIQC Contracts in accordance with applicable competitive bidding requirements in the jurisdiction where the EZIQC Contract solicitation is to occur;

iii. Creation and placement of advertisements in connection with the EZIQC Contract solicitation process;

iv. Review, revision, and finalization of the bid documents in timely manner;

v. Scheduling and execution of any pre-bid seminars and development of materials associated with the pre-bid seminars;

vi. Creation and identification of evaluation committee responsible for review, evaluation, and award of EZIQC Contracts; and,

vii. Consult with Gordian on the above-listed tasks at it determines in its discretion.

B. **Marketing Support**: Sourcewell will be responsible for providing Gordian with a designated representative to coordinate all associated marketing efforts relating to the EZIQC program. Sourcewell's designated marketing representative will be a member of the marketing department with primary responsibility for the marketing of the EZIQC Program. In addition, Sourcewell will:

1. Work with Gordian and exercise reasonable efforts to:

i. Carry out Sourcewell's responsibilities under the Joint Marketing Plan, as updated and amended by both parties, during the term of this Agreement;

ii. Provide any marketing materials developed under the Joint Marketing Plan to Gordian's designated marketing representative not less than 48 hours prior to publication. Gordian's failure to provide any objection to such marketing materials within 48 hours of receipt will be deemed an approval of such marketing materials;

iii. Schedule and attend, not less than monthly, recurring calls with Gordian's designated marketing representative for continued coordination and collaboration on all marketing activities associated with the EZIQC Program including the Joint Marketing Plan;

iv. Provide a list of scheduled conferences and speaking engagements, updated monthly, which Sourcewell plans to attend and which relate to the promotion and marketing of the EZIQC Program; and,

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v. Provide a list of all Sourcewell Participating Entities, updated quarterly, to Gordian's designated marketing representative.

2. Be responsible for all costs associated with marketing efforts initiated, assigned to, or otherwise carried out by Sourcewell unless otherwise set forth in this Agreement or the Joint Marketing Plan.

C. **Accounting and Collections**: Sourcewell will be responsible for providing Gordian with a designated representative to coordinate all associated invoicing and collection efforts relating to the EZIQC program. Sourcewell's designated accounting representative will be a member of the finance department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Sourcewell will:

1. Withhold any contract award or contract renewal from any EZIQC Contractor with an outstanding balance owed to Gordian of greater than $10,000.00 provided that Gordian has delivered monthly reports on outstanding accounts receivables as set forth in Article 2(H)(3).

2. Provide notice to Gordian of Sourcewell's intent to renew any EZIQC contract, or make any contract award, to any EZIQC Contractor with any outstanding accounts receivable that is over 90 days old, provided that Gordian has delivered monthly reports on outstanding accounts receivables as set forth in Article 2(H)(3).

3. Provide reasonable assistance and cooperation to Gordian in the collection of any outstanding balance owed by any EZIQC Contractor including, but not limited to, sending notices of default, notice of termination, or any other remedial action allowed by the EZIQC Contract or permitted by law.

4. Upon the approval of Sourcewell's General Counsel in the General Counsel's sole discretion, Join and bear the proportionate cost of any litigation initiated by Gordian to collect any unpaid balances owed by any EZIQC Contractor provided such unpaid balances exceed $50,000.00 in total for all EZIQC Contracts held by the EZIQC Contractor. Sourcewell's obligation to bear any cost of such litigation is contingent upon Gordian's full and timely performance of the vendor assessment and performance evaluation tasks described above with respect to the vendor.

ARTICLE 4: JOC SYSTEM LICENSE

Gordian hereby grants to Sourcewell, and Sourcewell hereby accepts from Gordian for the term of this Agreement, a non-exclusive right, privilege and license to Gordian's Job Order Contracting (JOC) System and other related proprietary materials to be used for the sole purpose of implementing and executing the EZIQC Program. Proprietary Information will include, but is not limited to Gordian's JOC Information Management System (as defined below), and support documentation, Construction Task Catalog (also commonly referred to as a Unit Price Book), construction cost data, training materials and other proprietary materials provided by Gordian. In the event this

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Agreement expires or terminates as provided herein, this JOC System License will terminate and Sourcewell will return to Gordian all Proprietary Information in its possession.

Sourcewell agrees to respect the copyrights, registrations, trade secrets and other proprietary rights of Gordian in the Proprietary Information during and after the term of this Agreement and will not reproduce, distribute or otherwise use the Proprietary Information for any purpose except as provided for herein, subject to federal and state laws related to public records disclosure.

Gordian believes that the unauthorized disclosure of Proprietary Information will result in irreparable harm to Gordian for which monetary damages would be an inadequate remedy and that no such disclosure will be made to anyone without first providing notice to Gordian. The parties acknowledge that as a local agency of the State of Minnesota, Sourcewell is required to comply with the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13) which classifies and controls government data. Gordian considers its Proprietary Information to meet the statutory definition of Trade Secret and would therefore be protected from release. Sourcewell will provide prompt notice to Gordian in the event of receipt of a request for release of Gordian's Proprietary Information, but will have no obligation to seek an administrative or judicial order declaring the data non-public or trade secret under Chapter 13.

Gordian agrees to grant a license to each EZIQC Contractor that is awarded an EZIQC Contract by Sourcewell in connection with the EZIQC Program, provided the EZIQC Contractor remits all required payments to Gordian in a timely manner, and provided Sourcewell includes licensing language in the EZIQC contract similar in form to this JOC System License. In the event any contractor participating in the EZIQC Program fails to remit any payment to Gordian in a timely manner, Gordian will have the discretion to terminate the contractor's access to the Proprietary Information until such time as all outstanding payments are made.

In the event of a conflict in terms and conditions between this JOC System License and any other terms and conditions of this Agreement or any purchase order or similar purchasing document issued by Sourcewell, this JOC System License will take precedence.

ARTICLE 5: CONSIDERATION AND PAYMENT

In consideration of the Services provided, and the JOC System License granted above, Gordian will be paid the following fee:

A. **Gordian Administrative Fee**: Gordian will collect the percentage listed below of the value of each Job Order procured by a Participating Entity from an EZIQC Contractor. All reimbursable expenses related to the administration of the EZIQC Program will be considered included in the Gordian Administrative Fee set forth above, except as otherwise provided for herein.

- For all purchase orders issued from September 15, 2020, to March 31, 2021, Gordian's fee will be: 6.25%.
- For all purchase orders issued on or after April 1, 2021, Gordian's fee will be 6%.

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B. **Sourcewell Administrative Fee**: In addition to the Gordian Administrative Fee, Sourcewell will be entitled to a Sourcewell Administrative Fee calculated as a percentage of the value of each Job Order procured by a Participating Entity from an EZIQC Contractor.

- For all purchase orders issued from September 15, 2020, to March 31, 2021, Sourcewell's fee will be: 1.25%.
- For all purchase orders issued on or after April 1, 2021, Sourcewell's fee will be 1.5%.

C. **State of Georgia:** For purchase orders issued under EZIQC contracts adopted by the State of Georgia, fees will be calculated as follows: 5.75% to Gordian, 0.75% to Sourcewell, and 1% to the State of Georgia.

D. **E&I Cooperative Services:** For purchase orders issued under EZIQC contracts adopted by E&I Cooperative Services, fees will be calculated as follows: 5.5% to Gordian, 1% to Sourcewell, and 1% to E&I Cooperative Services.

Sourcewell will include language in the EZIQC Contracts that: 1) instructs the EZIQC Contractors to include a total administrative fee of 7.5% in their adjustment factors to cover the full Administrative Fee; and 2) requires the EZIQC Contractors to remit the Sourcewell Administrative Fee to Gordian within five days of receiving payment from the Participating Entity for each Job Order performed by the EZIQC Contractor. Gordian will retain the Gordian Administrative Fee described above and remit all remaining collected Sourcewell Administrative Fees to Sourcewell.

ARTICLE 6: AUTHORIZED REPRESENTATIVE

A. Sourcewell's Authorized Representative is Tony Glenz, Supplier Development Supervisor, Office: 218-894-5491, Mobile: 218-371-1671, or his successor, and has the responsibility to monitor Gordian's performance and the authority to accept the services provided under this Agreement.

B. Gordian's Authorized Representative is Louis Patin, Vice President, National Programs, 30 Patewood Drive, Suite 350, Greenville, SC 29615, Office: 800-874-2291 Mobile: 818-518-0678, or his successor.

ARTICLE 7: INSURANCE

A. **Insurance Requirements:** At its own expense, Gordian must maintain insurance policy(ies) in effect at all times during the performance of this Contract with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:

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1. Workers' Compensation and Employer's Liability: Workers' Compensation: As required by any applicable law or regulation. Employer's Liability Insurance: must be provided in amounts not less than listed below:

Minimum limits:
$500,000 each accident for bodily injury by accident
$500,000 policy limit for bodily injury by disease
$500,000 each employee for bodily injury by disease

2. Commercial General Liability Insurance: Gordian will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office (ISO) Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Contract.

Minimum Limits:
$1,000,000 each occurrence Bodily Injury and Property Damage
$1,000,000 Personal and Advertising Injury
$2,000,000 aggregate for Products-Completed operations
$2,000,000 general aggregate

3. Commercial Automobile Liability Insurance: During the term of this Contract, Gordian will maintain insurance covering all owned, hired, and non-owned automobiles in limits of liability not less than indicated below. The coverage must be subject to terms no less broad than ISO Business Auto Coverage Form CA 0001 (2010 edition or newer), or equivalent.

Minimum Limits:
$1,000,000 each accident, combined single limit

4. Umbrella Insurance: During the term of this Contract, Gordian will maintain umbrella coverage over Workers' Compensation, Commercial General Liability, and Commercial Automobile.

Minimum Limits:
$10,000,000

5. Professional/Technical, Errors and Omissions, and/or Miscellaneous Professional Liability: During the term of this Contract, Gordian will maintain coverage for all claims Gordian may become legally obligated to pay resulting from any actual or alleged

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negligent act, error, or omission related to Gordian's professional services required under this Contract.

Minimum Limits:
$3,000,000 per claim or event
$3,000,000 annual aggregate

6. Network Security and Privacy Liability Insurance: During the term of this Contract, Gordian will maintain coverage for network security and privacy liability. The coverage may be endorsed on another form of liability coverage or written on a standalone policy. The insurance must cover claims which may arise from failure of Gordian's security resulting in, but not limited to, computer attacks, unauthorized access, disclosure of not public data – including but not limited to, confidential or private information, transmission of a computer virus, or denial of service.

Minimum limits:
$2,000,000 per occurrence
$2,000,000 annual aggregate

Failure of Gordian to maintain the required insurance will constitute a material breach entitling Sourcewell to immediately terminate this Contract for default.

B. **Certificates of Insurance**: Prior to commencing under this Contract, Gordian must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Contract. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or sent to the Sourcewell Contract Administrator assigned to this Contract. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf. All policies must include there will be no cancellation, suspension, non-renewal, or reduction of coverage without 30 days' prior written notice to the Gordian.

Upon request, Gordian must provide to Sourcewell copies of applicable policies and endorsements, within 10 days of a request. Failure to request certificates of insurance by Sourcewell, or failure of Gordian to provide certificates of insurance, in no way limits or relieves Gordian of its duties and responsibilities in this Contract.

C. **Additional Insured Endorsement and Primary and Non-Contributory Insurance Clause**: Gordian agrees Sourcewell and its Participating Entities, including their officers, agents, and employees, shall be covered as an additional insured under Gordian's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Gordian, and products and completed operations of Gordian. The policy provision(s) or endorsement(s) must further provide that coverage is primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds.

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D. **Waiver of Subrogation**. Gordian waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Contract or other insurance applicable to the Gordian or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Gordian or its subcontractors. Where permitted by law, Gordian must require similar written express waivers of subrogation and insurance clauses from each of its subcontractors.

E. **Umbrella/Excess Liability**: The limits required by this Contract can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies).

F. **Self-Insured Retentions**: Any self-insured retention in excess of $10,000 is subject to Sourcewell's approval.

ARTICLE 8: DATA AND INTELLECTUAL PROPERTY

A. **Government Data**: The Parties acknowledge that each is subject to the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13) as to data created and maintained under this Agreement.

B. **Trademark License**: Gordian grants to Sourcewell, during the term of this Agreement, a nontransferable, non-assignable, non-divisible, non-exclusive license, to use the trademarks, service marks and trade names set forth below, or as otherwise agreed to by the Parties in writing, solely in connection with this Agreement, and solely for the purpose of marketing, selling, advertising or otherwise promoting the Sourcewell EZIQC Program.

1. Gordian
2. EZIQC
3. Sightlines
4. RSMeans
5. Construction Task Catalog
6. eGordian
7. JOC Cloud

Any use of the trademarks set forth above shall at all times comply with any brand guidelines published by Gordian and provided to Sourcewell during the term of this Agreement. Any deviation from the brand guidelines shall require written approval from Gordian. Gordian may add, remove, or otherwise revise the list of trademarks by providing written notice to Sourcewell of such changes no less than 10 days prior to the date of such changes becoming effective.

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C. **Sourcewell Grant of License**: Sourcewell grants to Gordian a royalty-free, worldwide, non-exclusive right and license to use the its trademark in advertising and promotional materials for the purpose of marketing Sourcewell's relationship with Gordian. Gordian must not alter Sourcewell's Trademarks from the form provided by Sourcewell and must comply with Sourcewell's removal requests as to specific uses of its trademarks or logos. Upon the termination of this Contract for any reason, Gordian will have 30 days to remove all trademarks from signage, websites, and the like bearing Sourcewell's name or logo.

ARTICLE 9: GENERAL TERMS

A. **Governing Law, Jurisdiction and Attorney's Fees**: This Agreement will be interpreted and construed in accordance with the laws of the State of Minnesota. Any dispute arising out of this Agreement will be adjudicated in Todd County, Minnesota. In any action or proceeding to enforce rights under this Agreement, the prevailing party will be entitled to recover costs and reasonable attorney's fees from the other party.

B. **Assignment**: Neither party may assign or otherwise transfer its rights and obligations under this Agreement without prior written consent of the other party, not to be unreasonably withheld. Any prohibited assignment will be invalid.

C. **Independent Contractor**: Gordian is an independent contractor, and neither Gordian nor its employees or subcontractors will, under any circumstances, be considered employees, servants or agents of Sourcewell. Sourcewell will not be legally responsible for any negligence or other wrongdoing or intentional act by Gordian, its employees, servants or agents. Sourcewell will not withhold from payments to Gordian any federal, state or unemployment taxes, federal or state income taxes, Social Security tax, or any other amounts for benefits to Gordian or its employees, servants or agents. Furthermore, Sourcewell will not provide to Gordian any insurance coverage or other benefits, including workers' compensation, normally provided by Sourcewell for its employees.

D. **Hold Harmless**: Gordian will indemnify and hold Sourcewell harmless from all claims and demands that may result from its acts or omissions in performance of this Agreement, excluding any claims arising from the negligence or willful misconduct of Sourcewell or any of its representatives, agents or employees. Sourcewell's responsibility will be governed by the State of Minnesota's Tort Liability Act (Minnesota Statutes Chapter 466) and other applicable law.

E. **Amendments**: Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

F. **Severability**: In the event that any term of this Agreement is in conflict with or is otherwise unenforceable under any rule, law, or statutory provision, such terms will be deemed stricken from this Agreement, but such invalidity or unenforceability will not invalidate any

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other terms of the Agreement unless the invalidity or unenforceability of such provisions substantially harms, compromises an integral part of, or are otherwise inseparable from the remainder of this Agreement.

G. **Waiver**: Failure by either party to take action or assert any right under this Agreement will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right.

H. **Endorsement**: Gordian must not claim that Sourcewell endorses its products or services.

I. **Agreement Complete**: This Agreement contains all negotiations and agreements between the parties. No other understanding regarding this Agreement, whether written or oral, may be used to bind either party.

ARTICLE 10: TERMINATION

Either party may terminate this Agreement by providing 90 calendar days' written notice to the other party. Unless otherwise agreed by the parties, termination under this section will not relieve Sourcewell of its obligation to pay for satisfactorily completed services.

IN WITNESS WHEREOF, the parties have executed this Agreement.

Sourcewell

DocuSigned by:
By: Jeremy Schwartz
C0FE2A139D06489...
Authorized Signature

Jeremy Schwartz
Name – Printed

Title: Director of Operations & Procurement/CPO

Date: 9/16/2020 | 4:13 PM CDT

The Gordian Group, Inc.

DocuSigned by:
By: Ammon Lesher
2005815C104D406...
Authorized Signature

Ammon Lesher
Name – Printed

Title: Vice President / General Counsel

Date: 9/16/2020 | 4:08 PM CDT

Sourcewell–APPROVED:

DocuSigned by:
By: Chad Coauette
7E42B8B97A1402...
Authorized Signature

Chad Coauette
Name – Printed

Title: Executive Director/CEO

Date: 9/16/2020 | 4:17 PM CDT

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SOURCEWELL- GORDIAN
PROFESSIONAL SERVICES AGREEMENT
Intergovernmental Support Agreement Addendum

This ADDENDUM to the PROFESSIONAL SERVICES AGREEMENT between Sourcewell, 202 12th Street Northeast, PO Box 219, Staples, MN 56479 and The Gordian Group, Inc., 30 Patewood Drive, Suite 350, Greenville, SC 29615 (Gordian), Contract No. 091620-GGI, dated September 16, 2020, is effective upon final signature date.

This Addendum supplements the Professional Services Agreement and includes necessary process and contractual changes required to provide indefinite delivery/indefinite quantity construction contracting services (IDIQ Construction Services) to Sourcewell's Installation Support Program (ISP) on behalf of the United States Department of Defense (DoD) Installations through the use of an Intergovernmental Support Agreement (IGSA). Sourcewell and Gordian have agreed these supplemental terms, and to the extent applicable, the terms of the Professional Services Agreement will govern the ISP for IDIQ Construction Services.

Sourcewell is an eligible IGSA local government partner and has entered or will enter into one or more agreements with DoD Installations under a cost reimbursable contract to provide installation support services including facility maintenance, repairs, base operations support services, supplies, equipment, and minor construction services.

The operation of the EZIQC program and the terms of the Professional Services Agreement for Participating Entities is not changed by this Addendum. This Addendum applies only to the Installation Support Program.

Article 2: GORDIAN'S DUTIES

B. **EZIQC Contract Administration**: Gordian will be responsible for assisting Sourcewell in the procurement of the contracts of Sourcewell-awarded EZIQC Contractors including:

3. Contractual Terms and Conditions and Bid Forms: Gordian will provide technical assistance to Sourcewell staff, as requested, in the preparation of contractual terms and conditions, and bid forms, which incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Sourcewell and Gordian will mutually agree on the final form of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Sourcewell for the ISP including Price Proposal, Task Orders, payment terms, and minimum qualifications required for an EZIQC Contract award. Sourcewell will

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have final approval over all other content of the EZIQC Contracts except as set forth above.

C. **Information Management System:** Gordian will be responsible for providing the web-based JOC Information Management System (IMS) for an unlimited number of EZIQC Contractors for the purpose of executing work procured through the EZIQC Program subject to the terms of Gordian's JOC System License. The JOC IMS must be capable of providing full project tracking, developing cost proposals, generating project documentation, providing project scheduling, tracking diverse supplier participation (W/MBE, SBE, and Veteran- Owned businesses), and generating standard program reports as requested by Sourcewell. Gordian will not be responsible for providing access to, or training on, the JOC IMS to Sourcewell or any Installation in connection with the ISP.

E. Marketing Support :

1. Installation Recruitment and Onboarding: Gordian and Sourcewell will coordinate all activities related to recruiting additional Installations into the ISP. These coordination activities must include but are not limited to; identifying and prioritizing potential Installations; review and analysis of procurement rules within states for non-IGSA IDIQ contract viability; development and maintenance of priority list based on Installation needs and Sourcewell capacity; and development of consistent materials for educating Installations on the ISP and onboarding procedures.

F. Job Order Initiation and Development: Gordian will be responsible for providing the following Job Order Development services:

1. Project Identification and Initiation: Sourcewell will contact Gordian with any Installation project requests for assistance. Gordian will respond to Sourcewell within 48 hours of receipt of such request. Gordian will have the discretion to deny the requested assistance for any reason.

2. Contractor Identification: In the event Sourcewell requests a Joint Scope Meeting on behalf of an Installation to discuss the potential project, Gordian will provide the Installation with a list of available EZIQC Contractors for the project based on factors which include, but are not limited to, the type of work involved, and the location of the project. Sourcewell and Installation will be responsible for approving the selected EZIQC Contractor for the project.

3. Joint Scope Meeting: Upon request of Sourcewell, Gordian will schedule a Joint Scope Meeting at the project site to help Installation and the EZIQC Contractor agree on the details of the work that the EZIQC Contractor will perform. The purpose of the scoping process is to allow the EZIQC Contractor an opportunity to inspect the site and ask questions before submitting a Price Proposal.

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4. Develop Detailed Scope of Work: Gordian will assist Sourcewell, Installation, and EZIQC Contractor with preparing a Detailed Scope of Work that describes the work the EZIQC Contractor will perform. Gordian will also assist with resolving issues when project plans and actual conditions vary.

5. Request for Price Proposal: If requested by Sourcewell or Installation, after all parties are in agreement that the Detailed Scope of Work properly reflects the work to be performed, Gordian's project manager will send the Detailed Scope of Work and a Request for Proposal to the EZIQC Contractor.

6. Price Proposal Review: Gordian's project manager will review the Price Proposal to make sure the EZIQC Contractor has selected the appropriate tasks and quantities and will request the EZIQC Contractor to make any required changes to ensure the Price Proposal reflects the appropriate means and methods for accomplishing the Detailed Scope of Work. Gordian will also obtain and review any Sourcewell or Installation required information submitted by the EZIQC Contractor such as a construction schedule and list of proposed subcontractors. Gordian's project manager will submit the Price Proposal and related documents to Sourcewell. Sourcewell will incorporate the Price Proposal for review and approval by Installation.

7. Task Order Issuance: Upon receipt by Sourcewell of the review and approval by Installation of the Price Proposal including confirmation sufficient funding has been obligated by Installation, Sourcewell will work with Gordian to create and issue the Task Order to the selected EZIQC Contractor to initiate the completion of the project. Upon acceptance of the Task Order by EZIQC Contractor, Sourcewell will confirm with Installation and issue notice-to-proceed.

8. Construction Process and Project Management Services: During development of the Detailed Scope of Work, Sourcewell and Installation may request Project Management Services from Gordian to be included for specific projects. If Project Management Services are not requested by Installation, Installation will be responsible for all construction management activities. If Sourcewell and Installation request Project Management Services from Gordian and if accepted by Gordian, the description of services to be provided and proposed pricing will be submitted. If accepted, the applicable rate will be incorporated into the Price Proposal and Task Order.

9. Supplemental Job Orders: In the event unforeseen conditions arise or Installation and Sourcewell desire to change the Detailed Scope of Work, Gordian will assist Sourcewell with the development of a supplemental Job Order in the same manner as the original Job Order, including the approval process between Sourcewell and Installation as defined herein.

H. Accounting, Collections and Remittance of Administrative Fees: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all

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associated invoicing and collection efforts relating to the EZIQC program. Gordian's designated accounting representative will be a member of the accounting department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Gordian will:

1. Invoice and collect all applicable fees, including Project Management Fees if selected by Sourcewell and Installation on a per project basis, from the EZIQC Contractors in accordance with the terms of Article 5 and will remit, via electronic payment, the Sourcewell Administrative Fee (as defined in Article 5) on a monthly basis for all Sourcewell Administrative Fees collected during the preceding month.

    i. The parties agree that as a condition precedent to Gordian's obligation to remit the Sourcewell Administrative Fee, Gordian must first receive payment in full for the Gordian Administrative Fee (as defined in Article VIII). In the event Gordian does not receive payment of the Gordian Administrative Fee in full, for any reason, Gordian will not be liable to Sourcewell for payment of the Sourcewell Administrative Fee.

2. Provide Sourcewell with a monthly report detailing all Sourcewell Administrative Fees collected during the previous month including Sourcewell contract number, project names, project values, and the fees collected. The monthly report will be in the sales reporting template format developed and provided by Sourcewell. Sourcewell may request additional reports specifically identifying ISP projects.

3. Gordian must consult Sourcewell before initiating any litigation seeking any unpaid balances owed by any EZIQC Contractor resulting from an ISP project.

ARTICLE 3: SOURCEWELL DUTIES AND RESPONSIBILITIES

Sourcewell will perform the following duties and responsibilities to complete the Services:

A. **EZIQC Contract Procurement**:

3. Contractual Terms and Conditions and Bid Forms: Sourcewell will prepare contractual terms and conditions, and bid forms, that incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Sourcewell and Gordian will mutually agree on the final form of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Sourcewell for the ISP including Price Proposals, Task Orders,

payment terms and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

B. **Marketing Suppor**t:

1. <u>Installation Recruitment and Onboarding</u>: Gordian and Sourcewell will coordinate all activities related to recruiting additional Installations into the ISP. These coordination activities must include but is not limited to; identifying and prioritizing potential Installations; review and analysis of procurement rules within states for non-IGSA Support IDIQ contract viability; development and maintenance of priority list base on Installation needs and Sourcewell capacity; and development of consistent materials for educating Installations on the ISP and onboarding procedures.

ARTICLE 5: CONSIDERATION AND PAYMENT

Sections C (State of Georgia) and D (E&I Cooperative Services) do not apply on any ISP project.

ADDENDUM APPROVAL

IN WITNESS WHEREOF, the parties have executed this Agreement.

Sourcewell

DocuSigned by:
By: Jeremy Schwartz
4988402DA74D41E...

Name: Jeremy Schwartz

Title: Chief Operating and Procurement Officer

Date: 08/30/2023 | 10:13 AM EDT

The Gordian Group, Inc.

DocuSigned by:
By: Matt Bausher
12DBAF0CE2B4409...

Name: Matt Bausher

Title: Chief Customer Officer

Date: 08/17/2023 | 8:25 AM EDT

Sourcewell–APPROVED:

DocuSigned by:
By: Chad Coauette
48BAF71B0894454...

Name: Chad Coauette

Title: CEO

Date: 08/30/2023 | 10:23 AM EDT

Sponsored by: Interim City Manager

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK SOURCEWELL CONTRACT #FL-R10-GC02-111821-SCD WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR QUALIFIED PROFESSIONAL SERVICES FOR GENERAL CONSTRUCTION SERVICES (SOURCEWELL IFB #111821), AND ENTER INTO AN AGREEMENT WITH SHIFF CONSTRUCTION & DEVELOPMENT, INC. FOR LIFT STATION #16 REPLACEMENT PROJECT SERVICES, IN AN AMOUNT NOT TO EXCEED NINE HUNDRED FORTY-NINE THOUSAND, FOUR HUNDRED EIGHTY-FIVE DOLLARS AND NINETY-SEVEN CENTS ($949,485.97); PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Opa-Locka ("City") is seeking Lift Station 16 Replacement Services; and

WHEREAS, the Interim City Manager is requesting approval from the City Commission to piggyback the Sourcewell Professional Services Agreement with Shiff Construction & Development, Inc. and recommends that the City Commission accept the proposal from Shiff Construction & Development, Inc., attached hereto as Exhibit "A" for Lift Station 16 Replacement Services, in an amount not to exceed Nine Hundred Forty-Nine Thousand, Four Hundred Eighty-Five Dollars and Ninety-Seven Cents ($949,485.97); and

WHEREAS, Sourcewell previously awarded a contract to Shiff Construction & Development, Inc. for General Construction Services (attached as Exhibit "A"), pursuant to its Invitation for Bid (IFB) No. 111821, for a one-year period commencing December 29, 2021, with the option to extend the agreement up to two additional one-year periods, not to exceed a total of three years. The parties subsequently renewed the agreement twice, for a contract expiration date of December 28, 2024; and

WHEREAS, pursuant to Section 2-318(3) of the City's Purchasing Code (as approved by Ordinance 2020-07) the City may purchase and acquire under contracts with the federal government, the State of Florida or its political subdivisions and also municipal co-operative purchasing organizations and programs and when the City Manager has determined that the prices of the original contract are competitive and reasonable; and

WHEREAS, the project involves providing all necessary materials, labor, and equipment to replace Sewage Lift Station No. 16. This includes, but is not limited to: Excavation, demolition, and modification work; Abandoning the existing dry well; Removing the dry well chimney; Removing existing pumps, valves, piping, fittings, emergency discharge connections, sewer clean-out plugs, concrete slabs, and the top slab of the wet well; Removing and replacing in-kind the existing 6-foot chain link fence; Removing and relocating, as needed, the existing water meter and connecting it to the service line relocating the existing RTU antenna, electrical box, and concrete slab for electrical service, and relocating the existing backflow preventer unit and water faucet, as well as the existing plug valve; Providing, installing, operating, and removing temporary sewage effluent bypass pumps, equipment, and accessories; Installing a new concrete top slab for the wet well and valve vault structure; Installing aluminum access hatches for the wet well, valve vault, and emergency connection; Applying a protective coating for the wet well; Installing two 2.68 HP submersible pumps and related equipment; Installing a bubbler control system and associated equipment; Providing and installing a new meter and main disconnect; Implementing the proposed power /control system, including the necessary electrical panel, enclosure, telemetry system, and related equipment; Installing electrical conduits and junction boxes; Installing the RTU panel and SCAD A equipment provided by the Department; Performing electrical and mechanical work; Supplying all materials, equipment, and supplies needed for the pump station startup and testing; Installing sewage force main pipe and fittings, and connecting to the existing sewage force main; Replacing any sod, sidewalk, or pavement damaged during construction; Conducting site restoration and addressing any other appurtenant and miscellaneous items for a complete, satisfactory, and functional installation; and

WHEREAS, the City Commission finds that it is in the best interests of the City to piggyback Sourcewell Contract #FL-R9-GC01-111821-SCD with Shiff Construction & Development, Inc., attached hereto as Exhibit "B", in order to benefit from already negotiated rates and enter into an agreement, attached hereto as Exhibit "C", for Lift Station 16 Replacement Services, as provided herein, in an amount not to exceed Nine Hundred Forty-Nine Thousand, Four Hundred Eighty-Five Dollars And Ninety-Seven Cents ($949,485.97); and

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA LOCKA, FLORIDA:

Section 1. RECITALS ADOPTED.
The recitals to the preamble herein are incorporated by reference.

Section 2. AUTHORIZATION
The City Commission of the City of Opa-Locka, Florida hereby authorizes the City Manager to piggyback Sourcewell Contract #FL-R9-GC01-111821-SCD with Shiff

Construction & Development, Inc., attached hereto as Exhibit "B", in order to benefit from already negotiated rates and enter into an agreement, attached hereto as Exhibit "C", for Lift Station 16 Replacement Services, as provided herein, in an amount not to exceed Nine Hundred Forty-Nine Thousand, Four Hundred Eighty-Five Dollars And Ninety-Seven Cents ($949,485.97).

SECTION 3. SCRIVENER'S ERRORS.

Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the City Manager, or the City Manager's designee, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. EFFECTIVE DATE.

This Resolution shall take effect upon the adoption and is subject to the approval of the Governor or Governor's Designee.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____
Commissioner Kelley	_____
Commissioner Williams	_____
Vice Mayor Ervin	_____
Mayor Taylor	_____

City of Opa-locka
Agenda Cover Memo

Department Manager:	Adelina Gross			**Department Manager Signature:**			
Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**			
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**
				X			
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		**X**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact section below		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**
							X
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**				
	X						
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:** **Enhance Organizational** ☐ **Bus. & Economic Dev** ☐ **Public Safety** ■ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*		
	X						
Sponsor Name	Interim City Manager		**Department:** Capital Improvement Program		City Manager		

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA AUTHORIZING THE INTERIM CITY MANAGER TO PIGGYBACK THE SOURCEWELL PROFESSIONAL SERVICE AGREEMENT WITH SHIFF CONSTRUCTION FOR THE REPLACEMENT OF LIFT STATION 16.

Staff Summary:

City Administration is seeking approval from the City Commission to piggyback the Sourcewell Professional Services Agreement with Shiff Construction, Inc. and accept the proposal from Shiff Construction, Inc. for the replacement of Lift Station 16 ,in an amount of $949,485.97.

The project involves providing all necessary materials, labor, and equipment to replace Sewage Lift Station No. 16. This includes, but is not limited to:

- Excavation, demolition, and modification work
- Abandoning the existing dry well
- Removing the dry well chimney
- Removing existing pumps, valves, piping, fittings, emergency discharge connections, sewer clean-out plugs, concrete slabs, and the top slab of the wet well
- Removing and replacing in-kind the existing 6-foot chain link fence
- Removing and relocating, as needed, the existing water meter and connecting it to the service line; relocating the existing RTU antenna, electrical box, and concrete slab for electrical service; and relocating the existing backflow preventer unit and water faucet, as well as the existing plug valve
- Providing, installing, operating, and removing temporary sewage effluent bypass pumps, equipment, and accessories
- Installing a new concrete top slab for the wet well and valve vault structure
- Installing aluminum access hatches for the wet well, valve vault, and emergency connection
- Applying a protective coating for the wet well
- Installing two 2.68 HP submersible pumps and related equipment
- Installing a bubbler control system and associated equipment
- Providing and installing a new meter and main disconnect
- Implementing the proposed power/control system, including the necessary electrical panel, enclosure, telemetry system, and related equipment
- Installing electrical conduits and junction boxes
- Installing the RTU panel and SCADA equipment provided by the Department
- Performing electrical and mechanical work
- Supplying all materials, equipment, and supplies needed for the pump station startup and testing
- Installing sewage force main pipe and fittings, and connecting to the existing sewage force main
- Replacing any sod, sidewalk, or pavement damaged during construction
- Conducting site restoration and addressing any other appurtenant and miscellaneous items for a complete, satisfactory, and functional installation.

Therefore, Staff is requesting approval from the City Commission to authorize the Interim City Manager to piggyback the Sourcewell Professional Services Agreement with Shiff Construction, Inc. For Professional Services Agreement and accept the proposal from Shiff Construction, Inc. for the Lift Station 16 Replacement.

Financial Impact Pumpstation #16: The total cost for Pump Station #16 is $949,486. Of this amount, $800,000 has been allocated from ARPA funds under account 86-535650. ARPA Funding will be reprioritized through Budget Amendment #1 along with the remaining balance of ($151,641) to address the budget difference. As a Capital Improvement Project, this expenditure will not have a long-term ongoing impact on any Fund.

Proposed Action:

Staff recommends the City Commission authorize the Interim City Manager to piggyback the Sourcewell Professional Services Agreement with the Shiff Construction, Inc. and accept the proposal from Shiff Construction, Inc. for the Lift Station 16 Replacement.

Attachment:

1. Agenda
2. Proposal provided Shiff Construction, Inc.
3. Sourcewell Professional Services Agreement
4. Lift Station 16 Plans and Specifications

CITY OF OPA-LOCKA AGREEMENT FOR LIFT STATION 16 REPLACEMENT SERVICES

(General Construction Services Piggyback Competitive Award)

This Agreement is made this ____ day of _____, 2024, between the City of Opa-Locka, a municipal corporation organized and existing under the laws of the State of Florida and whose address is 780 Fisherman Street, Opa-Locka, Florida 33054 (the **"City"),** and Shiff Construction & Development, Inc. whose address is 180 SW 6th St Pompano Beach, FL 33060 (the **"Contractor").**

WITNESSETH

WHEREAS, the Contractor desires to enter into this Agreement ("Agreement") with City to provide Lift Station 16 Replacement Services (the "Project"); and

WHEREAS, the parties desire to incorporate the terms and conditions of the solicitation and contractual arrangement between Sourcewell and the Contractor, as set forth in the Sourcewell Invitation for Bid (IFB) 111821 ("the IFB"); and

WHEREAS, the City Code provides authority for the City to select and contract through the use of the competitive bid process of another government entity as an exception to the otherwise required formal bidding process.

NOW THEREFORE, in consideration of the mutual covenants set forth in this Agreement, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

Section 1. Term. The term of this Agreement commences upon fully execution of this agreement and continues through December 28, 2024, unless terminated earlier by its terms.

Section 2. Contract Terms. The Contractor agrees to provide the City with Lift Station 16 Replacement Services in accordance with the City's requirements as set forth herein and the Standard Contract between Sourcewell and the Contractor dated on or about January 3, 2022 (the "Sourcewell Agreement"), attached hereto and incorporated herein as Exhibit "A". The exhibits are incorporated into this Agreement for all purposes, and are collectively referred to as the "Contract Documents", and represent the entire agreement between the parties. In the event of conflict between or among the Contract Documents, the order of priority shall be: this Agreement, the Sourcewell Agreement and the Contractor's accepted proposal.

Section 3. Scope of Work

The following provisions are included:

A. City shall pay Contractor no more than the unit prices set forth in the Contract Documents and in accordance with the provisions of the Contract Documents. If the City requires services not covered by unit prices already made a part of the Contract Documents, the Contractor shall submit a detailed written proposal to the authorized City representative before providing any such services. For these purposes, Adelina Gross, as Capital Improvement Programs Manager, shall be the City Representative and may be reached at 305-953-2868 Ext 3001.

B. If permits are required, Contractor shall submit complete and accurate permit applications to all applicable permitting agencies within ten work days of receiving from the City all documents necessary to file such permit applications. The City shall pay all permit and related fees directly to the permitting agencies, including any permit fees charged by the City.

C. The City of Opa-Locka shall be substituted for the Sourcewell with regard to any and all provisions of the Sourcewell Agreement, the IFB, and the Contractor's bid, including by example and not limitation, with regard to bond requirements, insurance, indemnification, licensing, termination, default and ownership of documents. All recitals, representations, and warranties of Contractor made in those documents are restated as if set forth fully herein,made for the benefit of the City, and incorporated herein.

D. Contractor shall not commence work on the Project unless and until the requirements for insurance have been fully met by Contractor and appropriate evidence thereof, in the City's sole discretion, has been provided to and approved by the City.

Section 4. Assignment. Neither party may assign its rights or obligations under this Agreement without the consent of the other.

Section 5. Notice. Notice hereunder shall be provided in writing by certified mail, return receipt requested, or customarily used overnight transmission with proof of delivery, to the following parties, with mandatory copies, as provided below:

For City: Darvin Williams, City Manager
City of Opa-Locka
780 Fisherman Street
Opa-Locka, Florida, Florida 33054

Copy To: Burnadette Norris-Weeks, Esq.
City Attorney
Burnadette Norris-Weeks, P.A.
401 NW 7th Avenue
Fort Lauderdale, Florida 33311

For Contractor: Justen Schiff
Shiff Construction & Development, Inc.
180 SW 6th St
Pompano Beach, FL 33060

Copy To: Rod Feiner
1404 South Andrews Avenue
Fort Lauderdale, Fl 33316

Section 5. Severability. This Agreement sets forth the entire agreement between Contractor and City with respect to the subject matter of this Agreement. This Agreement supersedes all prior and contemporaneous negotiations, understandings and agreements, written or oral, between the parties. This Agreement may not be modified except by the parties' mutual agreement set forth in writing and signed by the parties.

Section 6. E-verify. In accordance with Florida Statutes §448.095, the Contractor, prior to commencement of services or payment by the City, will provide to the City proof of participation/ enrollment in the EVerify system of the Department of Homeland Security. Evidence of participation/enrollment will be a printout of the

Company's "Company Profile" page from the Everify system. Failure to be continually enrolled and participating in the E-Verify program will be a breach of contract which will be grounds for immediate termination of the contract by the City. The Consultant will not hire any employee who has not been vetted through E-Verify. The Contractor may not subcontract any work for the City to any subcontractor that has not provided an affidavit stating that the subcontractor does not employ, contract with or subcontract with an unauthorized alien.

IF CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (305) 953-2800, email: jflores@Opalockafl.gov OR BY MAIL: City of Opa-locka – City Clerk's Office, 780 Fisherman Street, Opa-Locka, FL 33054

IN WITNESS WHEREOF, the parties hereto have accepted, made and executed this Agreement upon the terms and conditions above stated on the day and year first above written.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

CITY: City of Opa-Locka

Date:_____

By:_____
Sha'mecca Lawson, Interim City Manager

APPROVED AS TO FORM AND
LEGAL SUFFICIENCYFOR THE USE
OF AND RELIANCE
BY THE CITY OF OPA-LOCKA ONLY:

By:_____
City Attorney
Burnadette Norris-Weeks, P.A.

By:_____
Joanna Flores, City Clerk

CONTRACTOR:
Shiff Construction & Development, Inc.

By: _____ Witness:_____

_____ _____
PRINT NAME

Date:_____

_____
TITLE

Date:_____

Work Order Signature Document

EZIQC Contract No.: FL-R10-GC02-111821- SCD

[X] **New Work Order** [ ] **Modify an Existing Work Order**

Work Order Number.: 135048.00 Work Order Date: 10/11/2024

Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Owner Name:	City of Opa Locka	Contractor Name:	Shiff Construction & Development, Inc.
Contact:	Adelina Gross	Contact:	Justen Shiff
Phone:	7729329572	Phone:	9545242575

Work to be Performed

Work to be performed as per the Final Detailed Scope of Work Attached and as per the terms and conditions of EZIQC Contract No FL-R10-GC02-111821- SCD.

Brief Work Order Description:

Time of Performance Estimated Start Date:
Estimated Completion Date:

Liquidated Damages Will apply: [ ] Will not apply: [X]

Work Order Firm Fixed Price: $949,485.97

Owner Purchase Order Number:

Approvals

Owner Date

Contractor Date

Detailed Scope of Work

To: Justen Shiff
Shiff Construction & Development, Inc.
1350 NE 56th St -Ste. 100
Fort Lauderdale, FL 33334
9545242575

From: Adelina Gross
City of Opa Locka
780 Fisherman Street
Opa-Locka, FL 33054
7729329572

Date Printed: October 11, 2024

Work Order Number: 135048.00

Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Brief Scope:

☐ **Preliminary** ☐ **Revised** ☒ **Final**

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

Per attached scope of work.

Subject to the terms and conditions of JOC Contract **FL-R10-GC02-111821- SCD**.

Contractor _____ Date _____

Owner _____ Date _____

Contractor's Price Proposal - Summary

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	135048.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #16 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$949,485.97

Lift Station #16	**$949,485.97**

Proposal Total	**$949,485.97**

Thisl total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: %

Contractor's Price Proposal - Detail

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	135048.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #16 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$949,485.97

	Sect.	Item	Mod.	UOM	Description	Line Total
Labor	Equip.	Material	(Excludes)			

Lift Station #16

1 01 22 16 00 0002 — EA — $22,000.00

Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.

	Quantity		Unit Price		Factor	=	Total
Installation	20,000.00	x	1.00	x	1.1000	=	22,000.00

Allowance for permit fees. Actual will be billed at cost plus 1%.

2 01 22 16 00 0002 — EA — $20,439.02

Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.

	Quantity		Unit Price		Factor	=	Total
Installation	18,580.93	x	1.00	x	1.1000	=	20,439.02

2% Payment and Performance Bond Fee on $929,046.95

3 01 22 16 00 0002 — EA — $34,450.00

Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt, invoice, or proof of payment shall be submitted with the Price Proposal.

	Quantity		Unit Price		Factor	=	Total
Installation	32,500.00	x	1.00	x	1.0600	=	34,450.00

Mobilization Fees

4 01 22 20 00 0010 — HR — $16,681.01

ElectricianFor tasks not included in the Construction Task Catalog® and as directed by owner only.

	Quantity		Unit Price		Factor	=	Total
Installation	240.00	x	65.57	x	1.0600	=	16,681.01

(3) men (8) hours a day for (10) days to safely remove all electrical prior to demolition, as well as to tie in power to new lift station pumps.

5 01 22 20 00 0015 — HR — $7,869.36

LaborerFor tasks not included in the Construction Task Catalog® and as directed by owner only.

	Quantity		Unit Price		Factor	=	Total
Installation	168.00	x	44.19	x	1.0600	=	7,869.36

(3) men (8) hours a day to assist with demolition for (7) days

6 01 22 20 00 0015 — HR — $22,483.87

LaborerFor tasks not included in the Construction Task Catalog® and as directed by owner only.

	Quantity		Unit Price		Factor	=	Total
Installation	480.00	x	44.19	x	1.0600	=	22,483.87

Line item being used to setup dewatering as its extremely labor intensive.(5) guys (8) hours per day for (12) days.

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

7	01 22 20 00 0047		HR	Senior Surveyor (Party Chief)									$5,542.10
			Installation		Quantity 120.00	x	Unit Price 43.57	x	Factor 1.0600	=	Total 5,542.10		
			As-builts										
8	01 22 20 00 0048		HR	Surveyor (Instrument person)									$4,700.04
			Installation		Quantity 120.00	x	Unit Price 36.95	x	Factor 1.0600	=	Total 4,700.04		
			Surveying for lift station										
9	01 22 20 00 0049		HR	Surveyor (Rod Person)									$3,347.90
			Installation		Quantity 120.00	x	Unit Price 26.32	x	Factor 1.0600	=	Total 3,347.90		
			Surveying for lift station										
10	01 22 20 00 0066		HR	Flagperson For Traffic Control									$12,178.76
			Installation		Quantity 260.00	x	Unit Price 44.19	x	Factor 1.0600	=	Total 12,178.76		
			MOT during construction.										
11	01 22 23 00 0291		MO	2,500 To 2,700 LB Capacity, 78" Wide, Tracked Skid-Steer Loader With Full-Time Operator									$26,553.34
			Installation		Quantity 2.00	x	Unit Price 12,525.16	x	Factor 1.0600	=	Total 26,553.34		
			Secondary small compact loader, clean up, sweeping, moving minor, small construction materials										
12	01 22 23 00 0291	0065		For Equipment Without Operator, Deduct									-$8,806.56
			Installation		Quantity 1.00	x	Unit Price -8,308.08	x	Factor 1.0600	=	Total -8,806.56		
13	01 22 23 00 0359		MO	7/8 To 1 CY Hydraulic Excavator With Full-Time Operator									$36,641.53
			Installation		Quantity 2.00	x	Unit Price 17,283.74	x	Factor 1.0600	=	Total 36,641.53		
			Massive 110,000-thousand-pound Main excavator, digging lift station, handling all sheeting and or shoring, setting big structure.										
14	01 22 23 00 0359	0065		For Equipment Without Operator, Deduct									-$10,294.19
			Installation		Quantity 1.00	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -10,294.19		
15	01 22 23 00 0371		MO	2 To 2-3/8 CY Hydraulic Excavator With Full-Time Operator									$53,312.11
			Installation		Quantity 2.00	x	Unit Price 25,147.22	x	Factor 1.0600	=	Total 53,312.11		
			Massive 110,000-thousand-pound Main excavator, digging lift station, handling all sheeting and or shoring, setting big structure.										
16	01 22 23 00 0371	0065		For Equipment Without Operator, Deduct									-$10,294.19
			Installation		Quantity 1.00	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -10,294.19		
17	01 22 23 00 0430		MO	1/2 To 5/8 CY, 65 HP, Loader-Backhoe With Standard Bucket And Full-Time Operator									$24,946.63
			Installation		Quantity 2.00	x	Unit Price 11,767.28	x	Factor 1.0600	=	Total 24,946.63		
			Main line loader moving pumps, excavated dirt, loading trucks, moving everyday construction materials										
18	01 22 23 00 0430	0065		For Equipment Without Operator, Deduct									-$10,294.19
			Installation		Quantity 1.00	x	Unit Price -9,711.50	x	Factor 1.0600	=	Total -10,294.19		

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

19	01	22	23	00 0551		MO	4' Maximum Trench Depth, Ride-On Trencher With Full-Time Operator							$23,583.26
								Quantity		Unit Price		Factor		Total
						Installation		2.00	x	11,124.18	x	1.0600	=	23,583.26
							Trench box to be used within sheet piling, for 24' depth excavation.							
20	01	22	23	00 0551	0030		For Equipment Without Operator, Deduct							-$8,806.56
								Quantity		Unit Price		Factor		Total
						Installation		1.00	x	-8,308.08	x	1.0600	=	-8,806.56
21	01	22	23	00 0916		MO	500 Gallon High Volume Vacuum With Full-Time Operator							$59,871.51
								Quantity		Unit Price		Factor		Total
						Installation		4.00	x	14,120.64	x	1.0600	=	59,871.51
							(2) dewatering vacuum pumps: (1) 10" & (1) 2" for 2 months each.							
22	01	22	23	00 0916	0028		For Equipment Without Operator, Deduct							-$17,613.13
								Quantity		Unit Price		Factor		Total
						Installation		2.00	x	-8,308.08	x	1.0600	=	-17,613.13
23	01	22	23	00 1134		MO	35,000 GPH, 4" Discharge, 106' Maximum Head, Gas Powered Portable Trash Pump							$2,429.88
								Quantity		Unit Price		Factor		Total
						Installation		2.00	x	1,146.17	x	1.0600	=	2,429.88
							(1) 4" dewatering trash pump.							
24	01	22	23	00 1160		MO	510,000 GPH, 12" Discharge, 200' Maximum Head, Diesel Powered Portable Silenced Environmental Trash Pump							$27,613.64
								Quantity		Unit Price		Factor		Total
						Installation		4.00	x	6,512.65	x	1.0600	=	27,613.64
							(2) Bypass Pumps for 2 months							
25	01	22	23	00 1441		MO	13 CY Rear Dump Truck With Full-Time Truck Driver							$40,265.10
								Quantity		Unit Price		Factor		Total
						Installation		2.00	x	18,992.97	x	1.0600	=	40,265.10
							Dump trucks for hauling all construction debris out, as well as bringing any necessary materials to the site.							
26	01	22	23	00 1441	0039		For Equipment Without Operator, Deduct							-$11,161.32
								Quantity		Unit Price		Factor		Total
						Installation		1.00	x	-10,529.55	x	1.0600	=	-11,161.32
27	01	56	23	00 0003		LF	Up To One Month Rental, FDOT Type K Barricade Rental, Per LFRental cost per linear foot for 1st month only. Includes initial transport to job, unloading, placement, pinning, unpinning, loading, and final transport to back to yard. Excludes mobilization charge for crew and equipment.							$35,573.60
								Quantity		Unit Price		Factor		Total
						Installation		800.00	x	41.95	x	1.0600	=	35,573.60
							400 LF per month for 2 months.							
28	01	56	23	00 0006		EA	Mobilization Of FDOT Type K BarricadesMobilization charge for crew and equipment for each trip to either install, remove or relocate temporary precast concrete K-Wall Barriers to, from, or on the job site.							$1,058.78
								Quantity		Unit Price		Factor		Total
						Installation		1.00	x	998.85	x	1.0600	=	1,058.78
29	01	56	26	00 0005		LF	Temporary 6' High Chain Link Fence And Posts, Up To 6 Months							$2,365.92
								Quantity		Unit Price		Factor		Total
						Installation		400.00	x	5.58	x	1.0600	=	2,365.92
							Temp Fence on Barricade.							
30	01	56	26	00 0005	0067		For >250 To 500, Deduct							-$152.64
								Quantity		Unit Price		Factor		Total
						Installation		400.00	x	-0.36	x	1.0600	=	-152.64

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

31	02 41 19 13 0071		EA	Saw Cut Minimum ChargeFor projects where the total saw cutting charge is less than the minimum charge, use this task exclusively. This task should not be used in conjunction with any other tasks in this section.									$809.49
		Installation		Quantity 1.00	x	Unit Price 763.67	x	Factor 1.0600	=	Total 809.49			
		Saw cut control joints in new slab											
32	03 31 13 00 0005		SF	6" 3,000 PSI Slab On Grade Concrete Slab Assembly									$985.80
		Installation		Quantity 120.00	x	Unit Price 7.75	x	Factor 1.0600	=	Total 985.80			
		Concrete slab for lift station											
33	03 31 13 00 0005	0159		For Up To 500, Add									$314.18
		Installation		Quantity 120.00	x	Unit Price 2.47	x	Factor 1.0600	=	Total 314.18			
34	03 35 13 00 0004		SF	Broom, Concrete Floor Finish									$90.31
		Installation		Quantity 120.00	x	Unit Price 0.71	x	Factor 1.0600	=	Total 90.31			
		broom finish new slab											
35	05 05 23 00 0885		EA	1/2" Diameter x 3-1/2" Length, 304/18-8 Stainless Steel, Hex Head Bolt									$1,050.46
		Installation		Quantity 100.00	x	Unit Price 9.91	x	Factor 1.0600	=	Total 1,050.46			
		SS Bolts											
36	05 05 23 00 1358		EA	1/2" Diameter, 304 Stainless Steel Hex Nut									$174.90
		Installation		Quantity 100.00	x	Unit Price 1.65	x	Factor 1.0600	=	Total 174.90			
		SS Nuts											
37	05 05 23 00 1439		EA	1/2" Inside Diameter, 304/18-8 Stainless Steel Flat Washer									$138.86
		Installation		Quantity 100.00	x	Unit Price 1.31	x	Factor 1.0600	=	Total 138.86			
		SS Washers											
38	05 12 23 00 0090		TON	Structural Shapes, Steel Plate A36 Structural SteelUp to 21.5 LB per SF									$54,795.72
		Installation		Quantity 6.00	x	Unit Price 8,615.68	x	Factor 1.0600	=	Total 54,795.72			
		(4) 8' x 12' Steel Plates											
39	09 97 63 00 0051		SF	Thortex Chemi Tech USR Chemical Protection System (One Coat 20 Mil Average)									$24,454.20
		Installation		Quantity 750.00	x	Unit Price 30.76	x	Factor 1.0600	=	Total 24,454.20			
		660 SF interior coating on wet wells.											
40	10 32 19 00 0003		EA	Stainless Steel Screen And FrameFits Heights between 18" to 27" and widths up to 42".									$280.44
		Installation		Quantity 1.00	x	Unit Price 264.57	x	Factor 1.0600	=	Total 280.44			
		12x12 SS Screen											
41	13 34 23 16 0002		EA	Parking Booth For Attendant									$2,016.88
		Installation		Quantity 1.00	x	Unit Price 1,902.72	x	Factor 1.0600	=	Total 2,016.88			
		Using this line item for 16x16x46 Guard shack as there is no item in the CTC.											

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

42	22 05 23 00 0028	EA	2" Diameter, 200 PSI, Non-Rising Stem, Crimped Bronze Gate Valve									$435.27
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	410.63	x	1.0600	=	435.27		
			Gate Valve									
43	22 05 23 00 0070	EA	2" Crimped Bronze, 200 PSI, In-Line Check Valve									$307.85
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	145.21	x	1.0600	=	307.85		
			Check Valves									
44	22 11 16 00 1262	LF	3/4" Cross-Linked Polyethylene (PEX , XPE or XLPE) Tubing									$684.76
				Quantity		Unit Price		Factor	=	Total		
			Installation	100.00	x	6.46	x	1.0600	=	684.76		
			3/4" Blue Polly									
45	22 11 16 00 1263	LF	1" Cross-Linked Polyethylene (PEX , XPE or XLPE) Tubing									$1,358.71
				Quantity		Unit Price		Factor	=	Total		
			Installation	130.00	x	9.86	x	1.0600	=	1,358.71		
			1" Blue Polly									
46	22 11 19 00 0020	EA	2" Inside Diameter, 20' Rubber Discharge Hose									$10,925.84
				Quantity		Unit Price		Factor	=	Total		
			Installation	15.00	x	687.16	x	1.0600	=	10,925.84		
			Discharge hoses									
47	22 11 19 00 0081	EA	3/4" Anti Siphon Pressure Type Vacuum Breaker									$288.60
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	272.26	x	1.0600	=	288.60		
			3/4" Vacuum Breaker									
48	22 11 23 13 0002	EA	1 HP Simplex Domestic Water Packaged Booster Pump And Tank									$171.52
				Quantity		Unit Price		Factor	=	Total		
			Installation	0.00	x	16,014.75	x	1.0600	=	0.00		
			Demolition	1.00	x	161.81	x	1.0600	=	171.52		
			Using this line item for 3"" Trash Pump as there is no item in the CTC.									
49	22 13 16 00 0524	LF	1-1/2" Schedule 40 Polyvinyl Chloride (PVC) DWV Pipe									$744.12
				Quantity		Unit Price		Factor	=	Total		
			Installation	100.00	x	7.02	x	1.0600	=	744.12		
			1.5" Sch 40 Pipe									
50	22 13 29 13 0040	EA	48" Steel Sump Covers, Square Or Round									$4,978.40
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	2,348.30	x	1.0600	=	4,978.40		
			Covers for wet well and valve vault.									
51	22 13 33 00 0077	EA	20 To 23 HP, 3" To 4" Discharge, Dry Pit Submersible Vertical Non-Explosion Proof Pump With Shielded Power Cable (Flygt NT3153)FLS and 50' electrical cable									$107,106.96
				Quantity		Unit Price		Factor	=	Total		
			Installation	2.00	x	50,198.52	x	1.0600	=	106,420.86		
			Demolition	2.00	x	323.63	x	1.0600	=	686.10		
			Submersible pumps for wet well.									
52	22 51 23 00 0200	EA	8" Pipe, Polyvinyl Chloride (PVC) Saddle Clamp For Flow Transducers (Signet PV8S080)									$721.03
				Quantity		Unit Price		Factor	=	Total		
			Installation	1.00	x	680.22	x	1.0600	=	721.03		
			8" Pipe Saddle									

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

53	23 05 19 00 0046		EA	2-1/2" Diameter Liquid Filled, Polypropylene Case, 0 To 100" H2O (Very Low PSI), Stainless Steel Internals And Stem, Pressure Gauge									$269.96
			Installation	Quantity 2.00	x	Unit Price 127.34	x	Factor 1.0600	=	Total 269.96			
			Gauges										
54	23 05 23 00 0285		EA	1" Threaded, Stainless Steel Body, Three Piece Ball Valve									$1,905.11
			Installation	Quantity 3.00	x	Unit Price 599.09	x	Factor 1.0600	=	Total 1,905.11			
			1" Stainless Steel Ball Valve										
55	23 05 29 00 1076		EA	4" Pipe Stanchion Support With U-Bolt (Cooper B-Line B3090)									$2,600.82
			Installation	Quantity 20.00	x	Unit Price 122.68	x	Factor 1.0600	=	Total 2,600.82			
			Pipe supports										
56	23 09 23 11 0031		EA	3/4" 2-Way Brass Ball Valve With Actuator (Belimo B220B+LRB24-3)									$277.55
			Installation	Quantity 1.00	x	Unit Price 261.84	x	Factor 1.0600	=	Total 277.55			
			3/4" Ball Valve										
57	31 08 13 00 0002		EA	Pile Load Test, 50 To 100 Ton Design Load									$38,332.97
			Installation	Quantity 1.00	x	Unit Price 36,163.18	x	Factor 1.0600	=	Total 38,332.97			
			Testing for sheet piling										
58	31 08 13 00 0002	0096		For Testing In Wet/Soft Soil Condition, Add									$11,499.89
			Installation	Quantity 1.00	x	Unit Price 10,848.95	x	Factor 1.0600	=	Total 11,499.89			
59	31 41 16 13 0004		TON	Driven Steel Sheet Piling, 25' Excavation, 38 PSF Steel Sheeting, Pull And Salvage									$59,976.40
			Installation	Quantity 31.00	x	Unit Price 1,825.21	x	Factor 1.0600	=	Total 59,976.40			
			Sheet piling required 15' x 15' x 24' deep excavation.										
60	32 11 29 13 0003		SY	8" Thick FDOT Limerock									$3,997.79
			Installation	Quantity 50.00	x	Unit Price 75.43	x	Factor 1.0600	=	Total 3,997.79			
			Limerock for asphalt repair										
61	32 11 29 13 0003	0008		For Up To 500, Add									$846.41
			Installation	Quantity 50.00	x	Unit Price 15.97	x	Factor 1.0600	=	Total 846.41			
62	32 12 16 13 0075		TON	Superpave Leveling Course, SP-12.5									$5,169.36
			Installation	Quantity 25.00	x	Unit Price 195.07	x	Factor 1.0600	=	Total 5,169.36			
			Asphalt repair										
63	32 92 23 00 0039		MSF	>1,000 To 4,000 SF, St. Augustine Sod, Installed On Level Ground									$4,583.19
			Installation	Quantity 4.00	x	Unit Price 1,080.94	x	Factor 1.0600	=	Total 4,583.19			
			Sod restoration										
64	33 05 61 00 0039		EA	8' Deep, 8' Diameter, Precast Concrete Manhole									$77,039.00
			Installation	Quantity 3.00	x	Unit Price 24,226.10	x	Factor 1.0600	=	Total 77,039.00			
			24' deep Lift Station Structure.										

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

65	33 05 61 00 0039	0407		For Bitumastic Coating, Add										$0.00
			Installation		Quantity 0.00	x	Unit Price 627.53	x	Factor 1.0600	=	Total 0.00			
66	33 05 61 00 0039	0407		For Bitumastic Coating, Add										$1,995.55
			Installation		Quantity 3.00	x	Unit Price 627.53	x	Factor 1.0600	=	Total 1,995.55			
67	33 05 61 00 0039	0411		For Epoxy Coating, Add										$4,133.75
			Installation		Quantity 3.00	x	Unit Price 1,299.92	x	Factor 1.0600	=	Total 4,133.75			
68	33 05 63 00 0029		EA	8' x 8' x 7' Precast Concrete Underground Utility Vault6" thick walls and 8" thick top.										$8,211.19
			Installation		Quantity 1.00	x	Unit Price 7,746.41	x	Factor 1.0600	=	Total 8,211.19			
			Vault structure											
69	33 14 13 13 0005		LF	4", Class 50, Mechanical Joint Ductile Iron Pipe										$2,072.30
			Installation		Quantity 50.00	x	Unit Price 39.10	x	Factor 1.0600	=	Total 2,072.30			
			4" DIP											
70	33 14 13 13 0021		EA	4" Mechanical Joint Ductile Iron 90 Degree Elbow										$963.38
			Installation		Quantity 5.00	x	Unit Price 181.77	x	Factor 1.0600	=	Total 963.38			
			4" 90s											
71	33 14 13 13 0037		EA	4" Mechanical Joint Ductile Iron 45 Degree Elbow										$1,663.46
			Installation		Quantity 10.00	x	Unit Price 156.93	x	Factor 1.0600	=	Total 1,663.46			
			4" 45's											
72	33 14 13 13 0402		EA	6" x 4" Mechanical Joint x Mechanical Joint Ductile Iron Reducer										$969.11
			Installation		Quantity 5.00	x	Unit Price 182.85	x	Factor 1.0600	=	Total 969.11			
			6"x4" Reducer											
73	33 14 13 13 0491		EA	4" Mechanical Joint x Flanged End (MJxFE) Ductile Iron Adapters										$1,147.17
			Installation		Quantity 4.00	x	Unit Price 270.56	x	Factor 1.0600	=	Total 1,147.17			
			4" Flange Adapters											
74	33 14 13 13 0524		EA	4" Mechanical Joint Gland, Gasket, T-Head Bolts And NutsIncludes four (4) 3/4" diameter plain finish Boltss with nut.										$1,316.31
			Installation		Quantity 20.00	x	Unit Price 62.09	x	Factor 1.0600	=	Total 1,316.31			
			4" Gland pack											
75	33 14 13 13 0525		EA	6" Mechanical Joint Gland, Gasket, T-Head Bolts And NutsIncludes six (6) 3/4" diameter plain finish Boltss with nut.										$795.32
			Installation		Quantity 10.00	x	Unit Price 75.03	x	Factor 1.0600	=	Total 795.32			
			6" Gland pack											
76	33 14 13 13 0568		EA	4" Mechanical Joint Restraints For Ductile Iron Pipe (MEGALUG® 1104DEC)										$3,380.98
			Installation		Quantity 18.00	x	Unit Price 177.20	x	Factor 1.0600	=	Total 3,380.98			
			4" Megalug's											

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

77	33 14 13 13 0569	EA	6" Mechanical Joint Restraints For Ductile Iron Pipe (MEGALUG® 1106DEC)									$1,166.05
				Quantity		Unit Price		Factor		Total		
			Installation	5.00	x	220.01	x	1.0600	=	1,166.05		
			6" Megalug's									
78	33 14 13 13 0684	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint x Plain End (MJxPE) Ductile Iron 90 Degree Elbow									$7,268.72
				Quantity		Unit Price		Factor		Total		
			Installation	12.00	x	571.44	x	1.0600	=	7,268.72		
			4" Flange P401 Lined									
79	33 14 13 13 1077	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint x Flanged End (MJxFE) Ductile Iron Adapters									$5,226.05
				Quantity		Unit Price		Factor		Total		
			Installation	8.00	x	616.28	x	1.0600	=	5,226.05		
			4" Flange P401 Lined									
80	33 14 13 13 1093	EA	4" Ceramic Epoxy Lined (P401), Bituminous Seal Coat, Mechanical Joint Ductile Iron Long Sleeves									$1,868.66
				Quantity		Unit Price		Factor		Total		
			Installation	3.00	x	587.63	x	1.0600	=	1,868.66		
			4" Sleeve P401 Lined									
81	33 14 13 13 1147	EA	4" Tee, Push-On Joint Ductile Iron									$1,237.07
				Quantity		Unit Price		Factor		Total		
			Installation	5.00	x	233.41	x	1.0600	=	1,237.07		
			4" Tee									
82	33 14 13 23 0012	LF	8" Class 200, SDR 21 Polyvinyl Chloride (PVC) Pressure Pipe									$1,374.78
				Quantity		Unit Price		Factor		Total		
			Installation	28.00	x	46.32	x	1.0600	=	1,374.78		
			New 8" SDR 26 Pipe									
83	33 14 13 23 0186	LF	6" AWWA C900, DR 14, PC 305 Polyvinyl Chloride (PVC) Pipe									$4,128.70
				Quantity		Unit Price		Factor		Total		
			Installation	250.00	x	15.58	x	1.0600	=	4,128.70		
			6" PVC C900									
84	33 14 13 39 0052	EA	1-1/2" x 1" Brass Compression Reducer Coupling									$380.46
				Quantity		Unit Price		Factor		Total		
			Installation	6.00	x	59.82	x	1.0600	=	380.46		
			Brass bushings									
85	33 14 13 53 0002	EA	4" Diameter x 1/2", 3/4" Or 1" Tap Double Stud Stainless Steel Service Saddle (Smith-Blair 372)									$805.30
				Quantity		Unit Price		Factor		Total		
			Installation	4.00	x	189.93	x	1.0600	=	805.30		
			4"x1" Saddle									
86	33 14 13 53 0224	EA	4" Ductile Iron Body, Flanged Coupling Adapter (Smith-Blair 912)									$400.47
				Quantity		Unit Price		Factor		Total		
			Installation	1.00	x	377.80	x	1.0600	=	400.47		
			Flange Camlock Assembly									
87	33 14 13 53 0224	EA	4" Ductile Iron Body, Flanged Coupling Adapter (Smith-Blair 912)									$4,004.68
				Quantity		Unit Price		Factor		Total		
			Installation	10.00	x	377.80	x	1.0600	=	4,004.68		
			4" Flanged 90s									

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

88	33 14 13 53 0257	EA	4" Ductile Iron Body, Omni Coupling System (Smith-Blair 441)										$255.80
		Installation		Quantity 1.00	x	Unit Price 241.32	x	Factor 1.0600	=	Total 255.80			
		Flange Camlock Assembly											
89	33 14 19 00 0010	EA	1" Threaded, Class 150, Bronze Angle Valve										$169.37
		Installation		Quantity 1.00	x	Unit Price 159.78	x	Factor 1.0600	=	Total 169.37			
		Angle Ball Meter Valve											
90	33 14 19 00 0017	EA	3/4" Threaded Ball Meter Valve (Mueller B-20200)										$122.42
		Installation		Quantity 1.00	x	Unit Price 115.49	x	Factor 1.0600	=	Total 122.42			
		Ball Meter Valve											
91	33 14 19 00 0108	EA	4" Flanged, Swing Type Gravity Operated Check Valve										$2,792.57
		Installation		Quantity 2.00	x	Unit Price 1,317.25	x	Factor 1.0600	=	Total 2,792.57			
		4" Check Valve											
92	33 14 19 00 0137	EA	1" Ball Corporation Valve (Mueller B-25000)										$481.07
		Installation		Quantity 6.00	x	Unit Price 75.64	x	Factor 1.0600	=	Total 481.07			
		1" Ball Corp											
93	33 14 19 00 0197	EA	4" Resilient Wedge Gate Valve, Mechanical Joint										$5,440.93
		Installation		Quantity 5.00	x	Unit Price 1,026.59	x	Factor 1.0600	=	Total 5,440.93			
		4" plug valves											
94	33 14 23 00 0047	EA	24-1/2" x 36" Precast Concrete Utility Box										$1,641.74
		Installation		Quantity 3.00	x	Unit Price 516.27	x	Factor 1.0600	=	Total 1,641.74			
		Valve boxes											
95	33 14 23 00 0048	EA	Reinforced Concrete Lid For 24-1/2" x 36" Utility Box										$1,596.42
		Installation		Quantity 3.00	x	Unit Price 502.02	x	Factor 1.0600	=	Total 1,596.42			
		Lids for Valve boxes											
96	33 31 11 00 0020	LF	2" Schedule 40 Polyvinyl Chloride (PVC) Sewer And Drain Pipe										$15,755.84
		Installation		Quantity 1,600.00	x	Unit Price 9.29	x	Factor 1.0600	=	Total 15,755.84			
		Header suction piping											
97	33 32 16 00 0049	EA	Monoflo TR Muncher Control Panel (MF-511)										$9,664.00
		Installation		Quantity 1.00	x	Unit Price 9,116.98	x	Factor 1.0600	=	Total 9,664.00			
		New control panel for lift station											
98	46 82 83 00 0194	EA	Spectra Transducer, NEMA 4X. Mounting Gear Excluded, Corrosive Resistant. Model: Controlotron #191-N-SC										$2,629.09
		Installation		Quantity 1.00	x	Unit Price 2,480.27	x	Factor 1.0600	=	Total 2,629.09			
		Transducer for wet wells.											
99	46 82 83 00 1548	Day	Commissioning (Sierra 207i Commissioning)										$26,360.93
		Installation		Quantity 8.00	x	Unit Price 3,108.60	x	Factor 1.0600	=	Total 26,360.93			
		Startup & Commissioning of lift station											

Work Order Number: 135048.00
Work Order Title: City of Opa-Locka - Lift Station #16 Replacement Project

Lift Station #16

100	46	82	83	00 2775	EA	Dual Float High And Caution Level Oil/Water Interface Bright Eye Sensor (Omntec BX-OWI-2)						$2,249.00
					Installation	Quantity 2.00	x	Unit Price 1,060.85	x	Factor 1.0600	=	Total 2,249.00
					High & low float switches in wet wells.							

Subtotal for Lift Station #16 **$949,485.97**

Proposal Total **$949,485.97**

This total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: **%**

Subcontractor Listing

Date: October 11, 2024

Re:

IQC Master Contract #:	FL-R10-GC02-111821- SCD
Work Order #:	135048.00
Owner PO #:	
Title:	City of Opa-Locka - Lift Station #16 Replacement Project
Contractor:	Shiff Construction & Development, Inc.
Proposal Value:	$949,485.97

Name of Contractor	Duties	Amount	%
No Subcontractors have been selected for this Work Order		$0.00	0.00

SHIFF
CONSTRUCTION + DEVELOPMENT
180 SW 6th Street
Pompano Beach, Florida 33060
t: (954) 524 2575 f: (954) 524 2576
CGC1509764 www.shiff.com
construction management | development | restoration | design + build | owner representation

11 October 2024
Re: City of Opa Locka 135048.00 Lift Station #16 Rehab Scope Of Work

1. This is a lump sum contract priced by drawings from SSN Engineering for:
   -City of Opa-Locka Lift Station #16: Sheets C-100, C-200(09/05/2022), C-201(09/05/2022), C-300(04/16/2024), C-310(05/02/2024), C-311(04/16/2024), E-1(09/05/2022), E-2(09/05/2022), E-3(09/05/2022), E-4(09/05/2022)

2. Mob/Demob/Mot/Dewatering Permit/Survey/As-builts/Testing
3. Gravity Sewer Bypass, All Plugging, Balling, Pumping, Back Up Pumps On Site And Set Up 24 Hours Day During Total Construction Duration
4. Complete Demo Of Site, Including Existing Lift Station, Vault And All Pipe And Fittings
5. Complete Installation Of New Lift Station And Vault, Pumps Fittings Base Elbows, Rails, Plates, Coatings, Pumps, Conduits, Electrical Panels. Final Start Up
6. Installation Of 8" SDR 26 Gravity Sewer, From Lift Station To Existing SSMH, Including News Cores And Rebuilding Channel And Coating
7. Complete Restoration Of Site Including All Fences, Gates, Pads Sidewalks, Curbs, ADA Ramp, Road Restoration, Sod, Irrigation.

CITY OF OPA-LOCKA

LIFT STATION 16 REHABILITATION

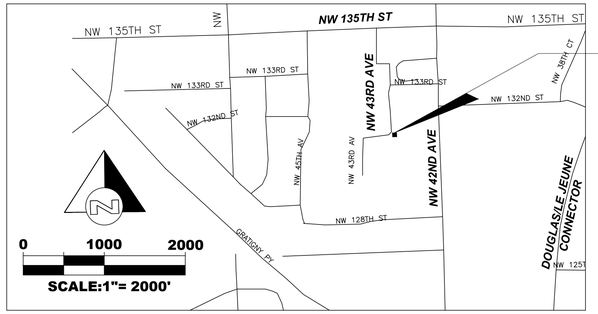
CITY COMMISSION

MAYOR: VERONICA WILLIAMS

VICE MAYOR: JOHN H TAYLOR

COMMISSIONER: DR. SHERELEAN BASS
CHRIS DAVIS
AUDREY DOMINGUEZ

INTERIM CITY MANAGER: DARVIN WILLIAM



PROJECT LOCATION

LOCATION MAP

INDEX OF SHEETS

SHEET NO	SHEET DESCRIPTION
C-100	COVER SHEET
C-200 TO C-201	GENERAL NOTES
C-300	SANITARY SEWER PLAN AND PROFILE
C-301	SANITARY SEWER DETAILS
C-310	MECHANICAL PLAN AND PUMP DATA
C-311	STRUCTURAL PLAN AND DETAILS
E-1	ELECTRICAL GENERAL NOTES
E-2	ELECTRICAL SITE PLAN
E-3	ELECTRICAL CONTROL PANEL
E-4	MISCELLANEOUS DETAILS

SSN ENGINEERING
13899 BISCAYNE BLVD., SUITE 310
NORTH MIAMI BEACH, FL 33181
PH (305) 440-4334
WWW.SSNENGINEERING.COM
CA# 29695

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RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

NOTE:

THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

PREPARED BY: SSN ENGINEERING, LLC
ENGINEER OF RECORD: RUBEL SIDDIQUE, PE
FL PE NO.: 67239

SHEET NO.
C-100

STANDARD REQUIREMENTS FOR WATER AND SEWER CONSTRUCTION (GS 0.5-SHEET 1 OF 2)

1. ALL MATERIALS AND CONOSTRUCTION UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE MIAMI–DADE WATER AND SEWER DEPARTMENT AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS.

2. COVER OVER WATER OR SEWER FORCE MAINS SHALL BE 3'–0" MIN. UNDER RIGID PAVEMENT.

3. ALL MAIN LINE VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND NO. 3 OR 53 VALVE BOXES FIRE HYDRANTS AND SERVICE VALVES SHALL BE INSTALLED COMPLETE WITH 6" RISER PIPES AND NO. 2 VALVE BOXES.

4. ALL FORCE MAIN SERVICE CONNECTIONS INTO PRESSURE TRANSMISSION MAINS SHALL HAVE A SHUT OFF VALVE AT THE POINT OF ENTRY.

5. ALL GRAVITY SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPARTMENT STANDARDS.

6. FIRE HYDRANT REQUIREMENTS (NUMBER AND LOCATION) SHALL BE AS REQUIRED BY THE MIAMI–DADE COUNTY FIRE DEPARTMENT OR THE APPROPRIATE FIRE AGENCY WITH INSTALLATION IN ACCORDANCE WITH DEPARTMENT STANDARDS.

7. CONTRACTOR MUST CALL M–DWASD INSPECTION DIVISION TO ARRANGE FOR A PRE–CONSTRUCTION MEETING 2 FULL BUSINESS DAYS PRIOR TO PROPOSED START OF CONSTRUCTION. CONTACT ONE CALL CENTER 48 HRS PRIOR TO EXCAVATION.

8. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY THE DEPARTMENT.
   a. EASEMENTS, IF REQUIRED.
   b. CONTRACTOR'S WAIVER AND RELEASE OF LIEN.
   c. ABSOLUTE BILL OF SALE.
   d. i. CONTRACTOR'S LETTER OF WARRANTY (I.E., LETTER AGREEMENT). ii. DEVELOPER'S CONTRACT BOND (I.E., CONTRACT AGREEMENT).
   e. "AS–BUILT" PRINTS 24"x36" SHOWING SPECIFIC LOCATIONS, DEPTH, ETC. OF All WATER AND SEWER FACILITIES AS LOCATED BY A LICENSED FLORIDA SURVEYOR, ALONG WITH PRINTS OF "AS–BUILT WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR. (No. OF PRINTS: 3–FOR WATER, 4–FOR GRAVITY SEWER AND 5–FOR FORCE MAIN OR PUMP STATION PROJECTS). THE DEPARTMENT RESERVES THE RIGHT TO REQUIRE SUBMITTAL ON ELECTRONIC MEDIA IN ACCORDANCE WITH SEC. 01775 "MAGNETIC MEDIA SUBMITTAL".
   f. H.R.S. LETTER OF RELEASE REQUIRED FOR All WATER PROJECTS.
   g. Bill OF SALE SKETCH (8 1/2"x11") FOR WATER AND SEWER, SEPARATELY.

11. All NEW CONNECTIONS FROM EXISTING DEPARTMENT MAINS TO BE MADE BY DEPARTMENT FORCES ONLY. THE CONTRACTOR TO EXCAVATE AT REQUIRED LOCATIONS, PROVIDE AND INSTALL MATERIAL WITH FITTINGS, PRIOR TO TAP.

12. AN APPROVED PAVING AND DRAINAGE PLAN MUST BE SUBMITTED TO MDWASD FOR All NEW SUBDIVISIONS PRIOR TO APPROVAL OF WATER AND SEWER PERMIT PLANS, UPON REQUEST.

13. UNLESS OTHERWISE SPECIFIED, All TAPS 20 INCHES AND SMALLER FOR CONNECTIONS TO EXISTING MAINS Will BE DONE BY DEPARTMENT FORCES. UNDER NO CIRCUMSTANCES Will THE CONTRACTOR BE PERMITTED TO TAP EXISTING MAINS IN THE SIZE RANGE SPECIFIED ABOVE. THE TAPPING SLEEVE AND TAPPING VALVE ARE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE INSPECTOR.

"AS-BUILT" REQUIREMENTS FOR WATER AND SEWER CONSTRUCTION (GS 0.5- SHEET 2 OF 2)

1. AT THE COMPLETION OF ANY WATER AND SEWER JOB, EITHER DONATION OR CONTRACT, THE CONTRACTOR SHALL SUBMIT:

a. AS–BUILT PRINTS WHICH HAVE BEEN SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER. (QTY. OF PRINTS, AS REQUIRED BY THE DEPARTMENT.)

2. "AS–BUILT" FORMAT:

a. 24"x36" PRINTS
b. LOCATION MAP SCALE SHOULD BE 1"=300' AND SECTION –TOWNSHIP–RANGE SHOULD BE SHOWN.
c. THE WORD "AS–BUILT" IN LARGE LETTERS.
d. TITLE BLOCK WITH DEPARTMENT DS, DW OR ER NUMBER AND PERTINENT INFORMATION.
e. PREFERRED SCALE TO BE I"= 40' HORIZONTALLY AND I"= 4' VERTICALLY*.
f. STREET NOMENCLATURE.
g. SEPARATE AS–BUILTS FOR WATER AND SEWER.
h. SEPARATE WATER AND SEWER PROFILE.
i. STATIONING STARTING WITH 0+00 AT PERMANENT REFERENCE POINT (I.E., CL,SL , ETC.) OR AS SHOWN ON DESIGN PERMIT PLANS, AND TO RUN CONTINUOUSLY TO END OF MAIN.
j. EASEMENTS, IF ANY, TIED TO PERMANENT REFERENCE POINT.
k. IDENTIFY ALL CONTROL LINES (I.E. BLDG. LINE, PROPERTY LINE, R/W, ETC).
l. ALL "PROPOSED" INFORMATION TO BE REMOVED FROM PRINTS, LEAVING ONLY "AS–BUILT" INFORMATION REFLECTED IN DRAWINGS.

3. WATER "AS–BUILTS" MUST INCLUDE:

a. PLANS SHOWING PIPE SIZE, MATERIAL AND OFFSET OF MAIN, DEFLECTIONS (IF ANY), STATION OF SERVICES, HYDRANTS AND FITTINGS AT THE MAINLINE (IF PERPENDICULAR TO IT), AND AT MAIN AND END OF SERVICES IF ANY, OTHER ANGLE, AND DEFLECTION OF PIPE, IF ANY.
b. PROFILE SHOWING TOP OF GROUND AND TOP OF PIPE ELEVATIONS AT EVERY 100' STATION AND AT ANY CHANGE IN GRADE (WITH CORRESPONDING STATION), PIPE SIZE AND PIPE MATERIALS REFERENCED TO PLAN.

4. SEWER "AS–BUILTS" MUST INCLUDE:

a. PLAN SHOWING MANHOLE NUMBER, PIPE SIZE AND PIPE MATERIAL OF PIPE, DEFLECTION, IF ANY (FORCE MAIN ONLY), AND LOCATION OF LATERALS WITH REFERENCE TO MANHOLE.
b. PROFILE SHOWING MANHOLE NUMBER (AS PER PLAN), RIM AND INVERT ELEVATIONS (IF MORE THAN ONE INVERT, LABEL NORTH, SOUTH , ETC), AND STATION STARTING AT EACH 0+00 AT DOWNSTREAM MANHOLE.

5. FORCE MAIN "AS–BUILT" SAME AS WATER MAIN ABOVE.
6. EACH AS–BUILT SHALL SHOW THE FLORIDA STATE PLANE COORDINATES (CURRENT READJUSTMENT) OF ALL THE MANHOLES AND VALVES AND OF AT LEAST TWO HORIZONTAL CONTROL POINTS PROPERLY IDENTIFIED AND LOCATED WITHIN THE PROJECT. OTHER SCALE MAY BE PERMITTED, BUT MUST BE APPROVED BY THE DEPA OF DRAWINGS.

RER-DERM WATER-SEWER GENERAL NOTES

1. A horizontal distance of at least 6 feet, and preferably 10 feet (outside to outside), shall be maintained between gravity or pressure sewer pipes and water pipes. The minimum horizontal separation can be reduced to 3 feet for vacuum-type sewers or for gravity sewers where the top of the sewer pipe is at least 6 inches below the bottom of the water pipe. When the above specified horizontal distance criteria cannot be met due to an existing underground facility conflict, smaller separations are allowed if one of the following is met:
   a) The sewer pipes are designed and constructed equal to the water pipe and pressure tested at 150 psi.
   b) The sewer is encased in a watertight carrier pipe or concrete.
   c) The top of the sewer is at least 18 inches below the bottom of the water pipe.

2. A vertical distance of at least 12 inches (outside to outside) shall be maintained between any water and sewer mains with sewer pipes preferably crossing under water mains. The minimum vertical separation can be reduced to 6 inches for vacuum-type sewers or for gravity sewers where the sewer pipe is below the water main. The crossing shall be arranged so that all water main joints are at least 6 feet from all joints in gravity and pressure sewer pipes. This distance can be reduced to 3 feet for vacuum-type sewers. When the above specified vertical distance criteria cannot be met due to an existing underground facility conflict, smaller separations are allowed if one of the following is met:
   a) The sewer pipes are designed and constructed equal to the water pipe and pressure tested at 150 psi.
   b) The sewer is encased in a watertight carrier pipe or concrete.

3. Air release valves shall be provided at high points of new force main sanitary sewers.

4. Gravity sanitary sewers constructed within a public wellfield protection area shall be C-900 PVC or Ductile Iron Pipe. The maximum allowable exfiltration rate of gravity sanitary sewers constructed in a public wellfield protection area shall be:
   a) Residential Land Uses. Fifty (50) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe.
   b) Non-Residential Land Uses. Twenty (20) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe.
   c) Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

5. The maximum allowable exfiltration rate of gravity sanitary sewers constructed outside a public wellfield protection area shall be one hundred (100) gallons per inch pipe diameter per mile per day, based on a minimum two (2) hour test having a minimum of two (2) feet of positive head above the crown of the pipe. Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

6. Forcemain sanitary sewers constructed within a public wellfield protection area shall be ductile iron, C-900 PVC, HDPE or reinforced concrete pressure sewer pipes.

7. The maximum allowable exfiltration/leakage rate of forcemain sanitary sewers shall be:
   a) Ductile Iron, C-900 PVC, HDPE and PVC Pipe. The allowable leakage rate specified in American Water Works Association Standard (AWWAS) C600-82 at a test pressure of 100 psi for a duration of not less than two (2) hours.
   b) Reinforced Concrete Pressure Pipe. Half (1/2) the allowable leakage rate specified in AWWA C600-82 at a test pressure of 100 psi for a duration of not less than two (2) hours.
   c) Any observed leaks or any obviously defective joints or pipes shall be replaced even when the total leakage is below that allowed.

8. The contractor shall verify nature, depth, and character of existing underground utilities prior to start of construction.

9. In no case shall a contractor install utility pipes, conduits, cables, etc. in the same trench above an existing water or sewer pipe except where they cross.

10. If any area of the work site is found to contain buried solid waste and/or ground or ground water contamination, the following shall apply:
    a) All work in the area shall follow all applicable safety requirements (e.g., OSHA, etc.) and notification must be provided to the appropriate agencies.
    b) Immediately notify the Environmental Monitoring and Restoration Division (EMRD). The EMRD can be contacted at (305) 372-6700.
    c) If contaminated soils and/or buried solid waste material is excavated during construction, then they require proper handling and disposal in accordance with the local, state and federal regulations. Be advised that the landfill owner/operator is the final authority on disposal and may have requirements beyond those provided by herein. If disposal within a Miami-Dade County owned landfill (Class I landfill) is appropriate and selected, please contact the Miami-Dade County Department of Solid Waste Management at (305) 594-6666 for information.
    d) The reuse of contaminated soils that are not returned to the original excavation requires prior approval of a Soil Management Plan from the Environmental Monitoring and Restoration Division. The EMRD can be contacted at (305) 372-6700.

11. Pumps must comply with the National Electrical Code (NEC) requirements for Class I, Group D, Division 1 locations (Explosion Proof).

12. The contractor is advised that a Tree Removal/Relocation Permit may be required prior to the removal and/or relocation of tree resources. Prior to removing or relocating any trees, the Contractor shall notify the Tree and Forest Resources Section of DERM at (305) 372-6574 or via e-mail at: tfrs@miamidade.gov , or contact the municipality with tree ordinance jurisdiction to obtain any required permits. Those trees not interfering with the construction shall be protected in place in accordance with the provisions of Section 24-49.5 of the Miami-Dade Code.

13. Please note that the demolition, removal, and/or disturbance of existing underground utilities that contain asbestos- cement pipes (ACP) are subject to the provisions of 40 CFR-61 Subpart M. Therefore, pursuant to the provisions of 40 CFR-61-145, a NOTICE OF DEMOLITION OR ASBESTOS RENOVATION form must be filed with the Air Quality Management Division (AQMD) of DERM, at least ten (10) working days prior to starting of any work. Note that the backfilling and burial of crushed ACP would cause these locations to be considered active disposal sites and subject to 40 CFR-61.154, and 40 CFR-61.151 a year after project completion.
    Existing standard operating procedures, as well as applicable federal, state and local regulatory criteria, must be followed and implemented to minimize any potential release of fugitive emissions, especially during project construction activities. The AQMD can be contacted via email at asbestos@miamidade.gov or 305-372-6925.

Rev. 4/30/2018

g:\pollution regulation\delegated env permitting\ww-conv_extensions\sewer extensions\forms and packages\ww application package\ww permit package\package march-2017\rer-derm-notes official last one-revised(2018-0429).doc

FOR ALL PROJECT WHERE REMOVAL OF UTILITY LINES IS PROPOSED

1– ALL EXISTING UTILITIES BEING REMOVED AND/OR RELOCATED MUST REMAIN IN EFFECT AND IN SERVICE, UNTIL SUCH TIME WHEN PROPOSED REPLACING UTILITIES HAVE BEEN INSTALLED AND IN SERVICE AND ALL RELATED SERVICES TO THE FIRST LINES HAVE BEEN TRANSFERRED TO THE LATTER ONES, BY M–DWASD FORCES AT OWNERS EXPENSES.

2– ALL ABANDONED OR REPLACED UTILITY LINES LOCATED IN PRIVATE PROPERTY SHALL BE REMOVED AND CAPPED AT MAIN, WHEN APPLICABLE, AFTER ALL INSTALLED SERVICES TO OR FROM THEM HAVE BEEN TRANSFERRED TO THE ALREADY INSTALLED AND IN SERVICE PROPOSED UTILITY LINES, ANY RELATED EASEMENT SHALL BE RELEASED AND VACATED AFTER REMOVAL OF LINES AND RESTORATIONS OF SITE, IF APPLICABLE, HAVE BEEN COMPLETED.

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

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NO.	REVISIONS	DATE	BY

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PH (954) 944-3272
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SSN ENGINEERING

PROJECT NO.
202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

GENERAL NOTES

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO.
C-200

1. ALL MATERIALS AND CONSTRUCTION UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF OPA-LOCKA AND/OR MIAMI-DADE COUNTY WATER & SEWER DEPARTMENT (MD-WASD) AND/OR MIAMI DADE COUNTY PUBLIC WORKS DEPARTMENT (MD-PWD) AND/ OR THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT.

2. MINIMUM COVER OVER MAINS SHALL BE 3'-0". 2'-0" FOR SERVICE LINES, UNLESS SPECIFIC WRITTEN EXCEPTION IS ISSUED OR REQUIRED BY AN AUTHORIZED REPRESENTATIVE OF CITY OF OPA-LOCKA.

3. DETECTOR TAPE SHALL BE INSTALLED 18" ABOVE THE CENTERLINE OF MAINS AND SERVICES. TAPES SHALL BE GREEN CONTINUOUSLY MARKED "CAUTION WASTEWATER FORCE MAIN BURIED BELOW".

4. ALL VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND No. 53 C.I. VALVE BOXES AND LIDS.

5. LOW PRESSURE SEWER MAIN SHALL BE HDPE SDR-11. SERVICE LINES SHALL BE HDPE SDR-9.

6. ALL JOINTS FOR LOW PRESSURE HDPE MAIN SHALL BE BUTT-FUSION WELDED. ALL WELDING OF JOINTS SHALL BE IN STRICT CONFORMITY WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER UNLESS OTHERWISE SPECIFIED IN WRITING.

7. CONTRACTOR MUST CALL THE CITY OF OPA-LOCKA INSPECTION DIVISION AND ALL OTHER APPLICABLE PERMITTING AGENCIES TO ARRANGE FOR A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO PROPOSED START OF CONSTRUCTION.

8. CITY OF OPA-LOCKA PERSONNEL WILL INSPECT ALL FACILITIES APPROVED BY THE ENGINEERING DEPARTMENT. ALL OTHER REQUIREMENTS OF THE PERMITTING AGENCY SHALL BE IN ACCORDANCE WITH THEIR STANDARDS AND REQUIREMENTS.

9. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY CITY OF OPA-LOCKA:

*EASEMENTS, IF REQUIRED (WHETHER BY DEED OR PLAT SUITABLY RECORDED)
* CONTRACTOR'S WAIVER AND RELEASE OF LIEN
* CONTRACTOR'S LETTER OF WARRANTY (I.E. LETTER AGREEMENT)
* AS-BUILT 24" x 36" SHOWING SPECIFIC LOCATIONS, DEPTHS, ETC. OF ALL WATER FACILITIES AS LOCATED BY A LICENSED SURVEYOR, ALONG WITH TWO (2) PRINTS OF THE "AS-BUILT" WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR OR ENGINEER OF RECORD AND ENDORSED BY THE CONTRACTOR IN ACCORDANCE WITH MD-WSD STANDARDS.

10. ALL NEW CONNECTIONS FROM EXISTING CITY OF OPA-LOCKA MAINS TO BE INSPECTED BY CITY OF OPA-LOCKA FORCES PRIOR TO BACKFILL.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL LOCATIONS, DIMENSIONS, ELEVATIONS AND THE LOCATIONS OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE LOCATIONS SHOWN ON THE PLANS ARE NOT GUARANTEED ACCURATE OR CORRECT BY THE KNOWN UTILITY COMPANIES.

12. THRUST BLOCKS SHALL BE PROVIDED TO ALL BENDS, TEES AND PLUGS IN ACCORDANCE WITH MD-WASD STANDARD DETAILS.

13. PIPE INSTALLATION, CLEANING, FLUSHING, AND TESTING, AS PER CITY OF OPA-LOCKA AND STATE OF FLORIDA STANDARDS FOR THE INSTALLATION OF PRESSURE SEWER BY CUSTOMER DONATION PROJECTS.

14. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF INSPECTIONS FOR ANY CONSTRUCTION ACTIVITIES OCCURRING OUTSIDE NORMAL WORKING HOURS (8:00 a.m. TO 5:00 p.m.) SATURDAYS AND SUNDAYS AND HOLIDAYS EXCLUDED AND ARRANGEMENTS FOR INSPECTIONS OUTSIDE NORMAL WORKING HOURS MUST BE MADE A MINIMUM OF 48 HOURS IN ADVANCE OF THE CONSTRUCTION ACTIVITY.

15. ALL TRENCHES TO BE EXCAVATED AND BACKFILLED AS PER THE MD-WASD DETAIL GS-1.9.

16. SURFACE RESTORATION, PAVEMENT REPLACEMENT, SIDEWALK REPLACEMENT, TRENCH BACKFILLING AND COMPACTION SHALL COMPLY WITH THE APPLICABLE CURRENT MD-WASD, MD-PWD AND FDOT STANDARDS.

17. THE ENGINEER OF RECORD SHALL PROVIDE CITY OF OPA-LOCKA WITH A SIGNED AND SEALED PRESSURE TEST REPORT CERTIFYING PRESSURE TEST RESULTS.

18. FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE SHALL BE CONDUCTED BY THE CONTRACTOR FOLLOWING METHODS AND PROCEDURES NOTED ASTM DESIGNATION: F2164-13

19. A HORIZONTAL DISTANCE OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER AND SEWER MAINS. WHEN A 10 FEET HORIZONTAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, THIS HORIZONTAL DISTANCE MAY BE REDUCED TO 6 FEET. IF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF A GRAVITY SANITARY SEWER, THIS HORIZONTAL DISTANCE MAY BE REDUCED TO 3 FEET.

20. IN HIGHLY CONGESTED AREAS, WHERE EITHER WATER OR SEWER FACILITIES ARE EXISTING AND THE SEPARATION REQUIREMENTS CANNOT BE MET, SPECIAL CONSIDERATION MAY BE GIVEN SUBJECT TO A COMPLETE EVALUATION OF EXISTING AND PROPOSED CONDITIONS.

21. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

22.TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P, EXCAVATIONS, TRENCHING AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS STANDARDS AND INTERPRETATIONS.

23. ALL ABOVE GROUND PIPE & FITTING, VALVE BOXES, AIR RELEASE VALVE COVERS AND ANY OTHER MARKING DEVICE, SHALL BE COLOR CODED IN ACCORDANCE WITH THE UTILITY LOCATION & COORDINATION COUNCIL UNIFORM COLOR CODE AS SHOWN IN MIAMI-DADE COUNTY WATER & SEWER DEPARTMENT (MD-WASD).

NOTES FOR CONTAMINATED SITES

IF ANY AREA OF THE WORK SITE IS FOUND TO CONTAIN BURIED SOLID WASTE AND/OR GROUND OR GROUND WATER CONTAMINATION, THE FOLLOWING SHALL APPLY:

1. ALL WORK IN THE AREA SHALL FOLLOW ALL APPLICABLE SAFETY REQUIREMENTS (E.G., OSHA, ETC.) AND NOTIFICATION MUST BE PROVIDED TO THE APPROPRIATE AGENCIES.

2. IMMEDIATELY NOTIFY THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION (EMRD). THE EMRD CAN BE CONTACTE AT (305) 372-6700.

3. IF CONTAMINATED SOILS AND/OR BURIED SOLID WASTE MATERIAL IS EXCAVATED DURING CONSTRUCTION, THEN THEY REQUIRE PROPER HANDLING AND DISPOSAL IN ACCORDANCE WITH THE LOCAL, STATE AND FEDERAL REGULATIONS. BE ADVISED THAT THE LANDFILL OWNER/OPERATOR IS THE FINAL AUTHORITY ON DISPOSAL AND MAY HAVE REQUIREMENTS BEYOND THOSE PROVIDED BY HEREIN. IF DISPOSAL WITHIN A MIAMI-DADE COUNTY OWNED LANDFILL (CLASS I LANDFILL) IS APPROPRIATE AND SELECTED, PLEASE CONTACT THE MIAMI-DADE COUNTY DEPARTMENT OF PUBLIC WORKS AND WASTE MANAGEMENT AT (305) 594-1670 FOR INFORMATION.

4. THE REUSE OF CONTAMINATED SOILS IS PROHIBITED WITHOUT PRIOR APPROVAL FROM THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION. THE EMRD CAN BE CONTACTED AT (305) 372-6700.

5. A SUBSURFACE INVESTIGATION WAS CONDUCTED BY ENVIRONMENTAL REGULATORY COMPLIANCE, INC. (ERC) DATE MARCH 2022. THE REPORT STATED THAT THE PRESENCE OF SOLID WASTE MIXED WITH OTHER MATERIAL (CARBONATE AND SILICA SAND, LIMEROCK, AND ORGANIC MATERIAL) WILL NOT SUBSIDE BY THE INSTALLATION OF THE 2 INCH SEWER LINE.

DESIGN APPROACH

1. A SUBSURFACE INVESTIGATION WAS CONDUCTED BY ENVIRONMENTAL REGULATORY COMPLIANCE, INC. (ERC) DATE MARCH 2022. THE REPORT STATED THAT THE PRESENCE OF SOLID WASTE MIXED WITH OTHER MATERIAL (CARBONATE AND SILICA SAND, LIMEROCK, AND ORGANIC MATERIAL) WILL NOT SUBSIDE BY THE INSTALLATION OF THE 2 INCH SEWER LINE.

2. DUE THE UNDERLYING SOIL CONDITION OF THE SITE, HDPE PIPE WAS USED TO ADDRESS ANY CONTAMINATION ISSUES. ACCORDING TO THE PIPE MANUFACTURER, POLYETHYLENE IS NON-CONDUCTIVE AND IMMUNE TO GALVANIC AND ELECTROCHEMICAL EFFECTS. THUS POLYETHYLENE WILL NOT CORRODE IN THE MANNER OF METAL AND CONCRETE PIPING. PERFORMANCE POLYETHYLENE PIPES HAVE OUTSTANDING RESISTANCE TO A WIDE RANGE OF CHEMICALS AND ENVIRONMENTAL CONDITIONS, MAKING THEM IDEAL CANDIDATES FOR USE WITH CORROSIVE FLUIDS AND CHEMICALS, AND UNDER HARSH ENVIRONMENTAL CONDITIONS.

3. ALL THE JOINT IN THE HDPE PIPES WILL BE FUSED JOINT, THERFORE NO POSSIBILITY OF JOINT LEAKING.

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

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NO.	REVISIONS	DATE	BY

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NORTH MIAMI BEACH, FL 33181
PH (954) 944-3272
FBPE NO. CA00029695
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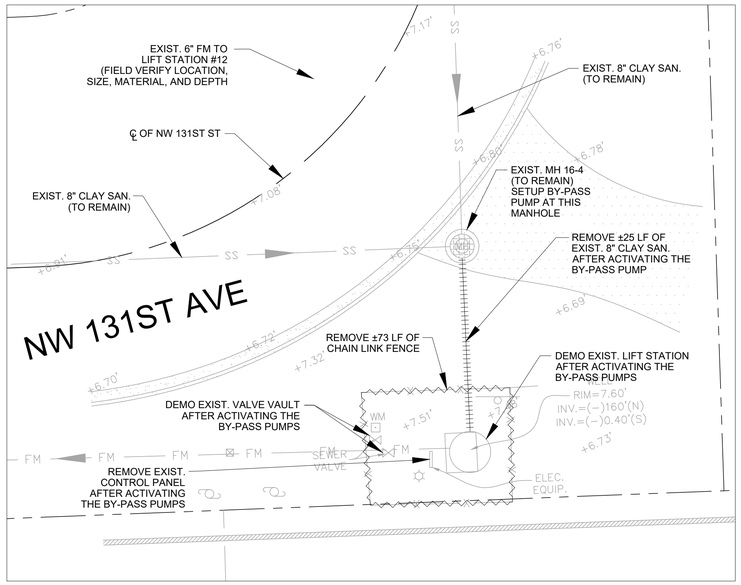
PROJECT NO.
202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

GENERAL NOTES

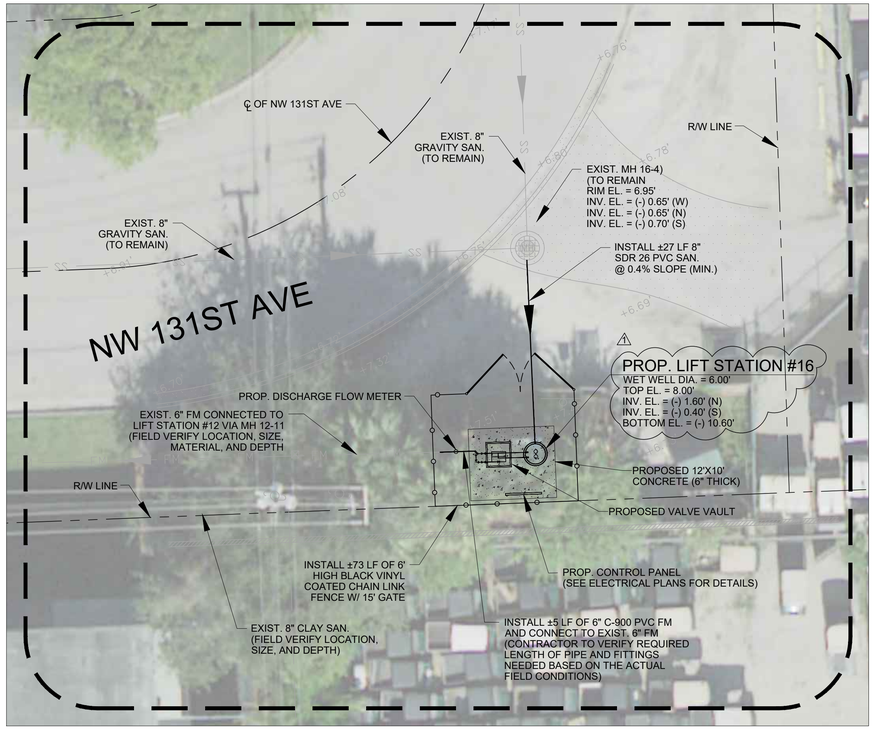
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 09-05-2022
SHEET NO.
C-201



SITE DEMOLITION PLAN

1" = 10'

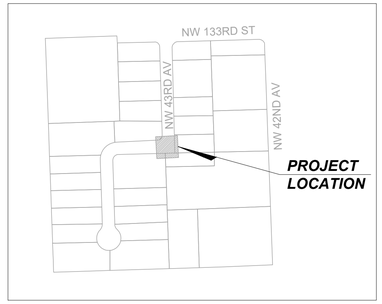


ENLARGED VIEW

1" = 10'

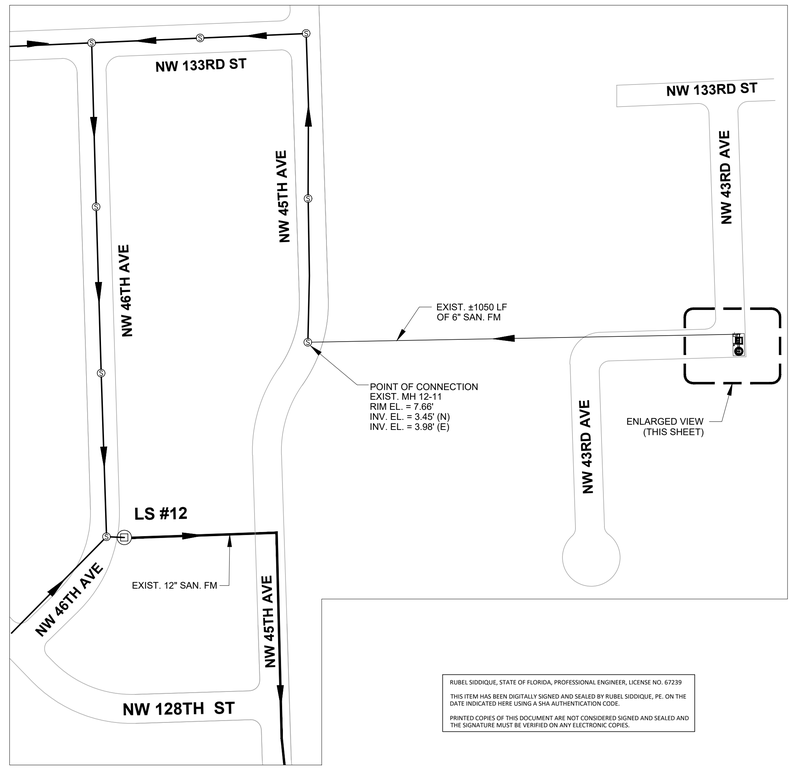


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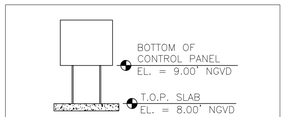
LOCATION MAP

N.T.S.



OVERALL VIEW OF POINT OF CONNECTION

N.T.S.



CONTROL PANEL

(SEE ELECTRICAL PLANS FOR DETAILS)

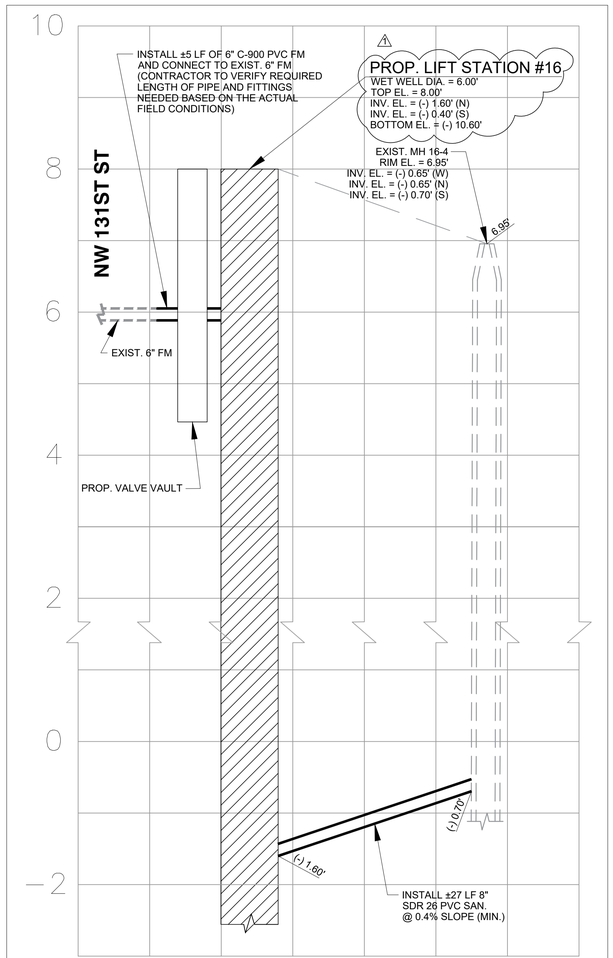
LEGEND

- R/W LINE OR PROPERTY LINE
- BUILDING OUTLINE
- SD — EXISTING STORM PIPE
- WM — EXISTING WATER PIPE
- SS — EXISTING SAN. SEWER PIPE
- EXISTING SAN. SEWER MANHOLE
- 7.31 — EXISTING GRADE ELEVATION
- PROPOSED FORCE MAIN
- EXISTING FIRE HYDRANT

NOTE:
ALL ELEVATIONS REFER TO NGVD 1929.
NAVD88 = NGVD29 - 1.55

GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN FUNCTION OF SEWAGE PUMPING DURING CONSTRUCTION BY UTILIZING BY-PASS PUMPING SYSTEM, FITTINGS AND VALVES AS REQUIRED. CONTRACTOR SHALL SUBMIT A PLAN OUTLINING SEWAGE "BY-PASS" PROCEDURE TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.
2. THE EXISTING UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE CITY OF OPA-LOCKA WATER AND SEWER ATLAS, SURVEY AND SITE VISIT. CONTRACTOR MUST VERIFY SIZE, LOCATION, AND INVERTS OF ALL UTILITIES PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL PERFORM ALL WORK WITHIN LEGAL PROPERTY AND EASEMENT, AND SHALL NOT DISTURB ADJACENT PROPERTY.
4. CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING PROPOSED PIPING/FITTINGS CONNECTING TO IT.
5. CARE SHOULD BE TAKEN TO AVOID DISTURBING ELECTRICAL SERVICE IN THE AREA UNDER CONSTRUCTION.
6. CONTRACTOR SHALL INCLUDE NECESSARY CUTTING, PATCHING, AND RESTORATION OF ALL EXISTING SURFACES TO MATCH SURROUNDING AREAS.
7. CONTRACTOR TO COAT ALL UNDERGROUND FITTINGS THOSE ARE IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC OR APPROVED EQUAL.
8. ELEVATIONS INDICATED HEREON ARE IN FEET AND DECIMALS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929).
9. THE MINIMUM WET-WELL BOTTOM SLOPE SHALL BE 2:1 TO ALLOW SELF-CLEANING AND MINIMUM DEPOSIT OF DEBRIS.
10. THE ELECTRICAL SYSTEMS AND COMPONENTS IN RAW WASTEWATER WET WELLS SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE REQUIREMENTS FOR CLASS I, GROUP D, DIVISION 1.
11. THE STATION SHOULD BE EQUIPPED WITH MISSION M850 RTUs FOR REAL-TIME ALARMS AND STREAMING DATA OR APPROVED EQUAL. MONITOR/RECORD OPERATING HOURS BETWEEN MIDNIGHT AND FIVE (5) AM.
12. FLOW METER SHALL BE ABB ELECTROMAGNETIC FLOW METER DN150 (6") OR APPROVED EQUAL.
13. THE STATION WILL EQUIPPED WITH DEVICES TO MONITOR DISCHARGE PRESSURE (E.G. PRESSURE TANSDUCER) WITH HIGH AND LOW PRESSURE ALARM SET POINTS.



SEWER FORCE MAIN PROFILE

SCALE: 1" = 10' HOR.
1" = 2' VER.

CONSTRUCTION SET

NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS

SSN ENGINEERING, LLC
2020 NE 163RD ST, SUITE 300HH
NORTH MIAMI BEACH, FL 33162
PH (954) 944-3272
FBPE NO. CA00029695
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SSN ENGINEERING

PROJECT NO.
202201004

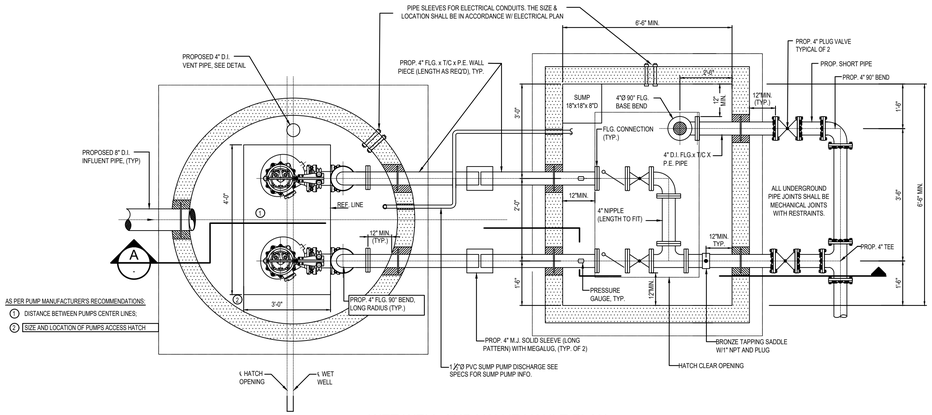
CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

SANITARY SEWER PLAN AND PROFILE

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

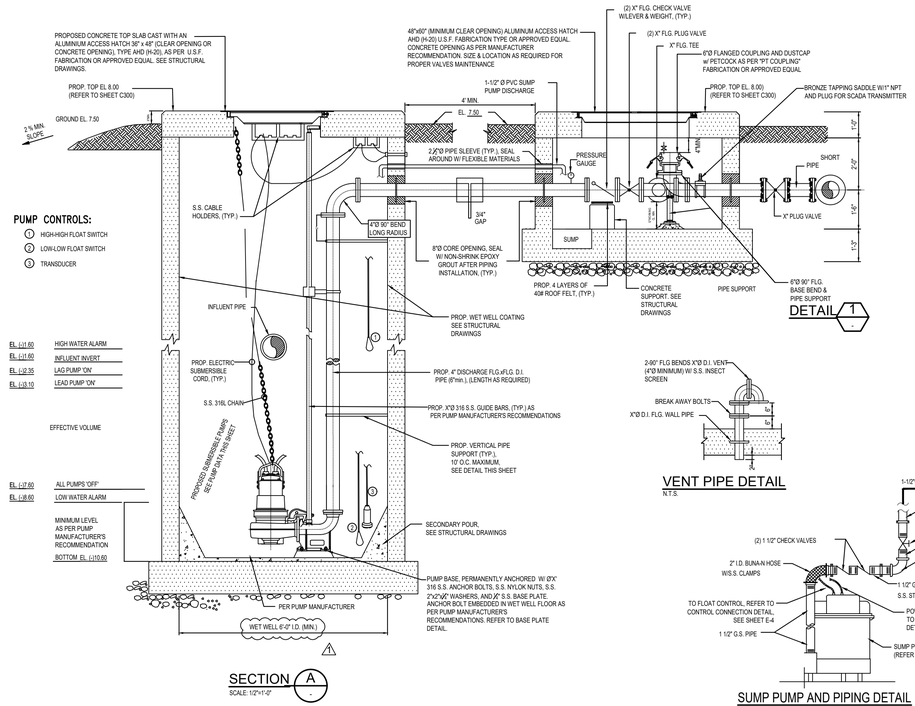
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DATE: 04-16-2024
SHEET NO.
C-300

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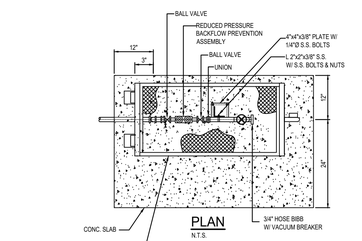
WET WELL AND VALVE VAULT PLAN

SCALE: 1/2"=1'-0"



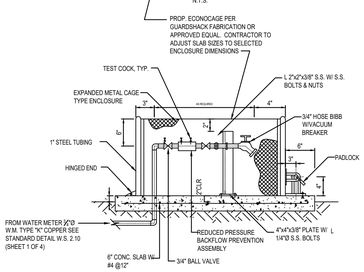
SECTION A

SCALE: 1/2"=1'-0"



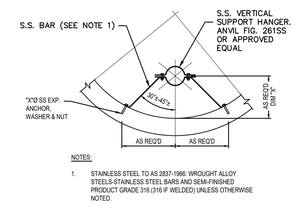
PLAN

N.T.S.



BACKFLOW PREVENTER WITH HOSE BIBB

N.T.S.



NOTES:

1. STAINLESS STEEL TO AS 2837-1986: WROUGHT' ALLOY STEELS-STAINLESS STEEL BARS AND SEMI-FINISHED PRODUCT GRADE 316 (316 IF WELDED) UNLESS OTHERWISE NOTED.
2. DIM "A" TO BE MEASURED AND CONFIRMED ON SITE

VERTICAL PIPE SUPPORT DETAIL

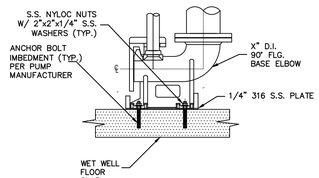
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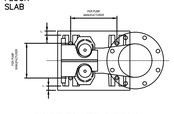
VENT PIPE DETAIL

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SUMP PUMP AND PIPING DETAIL

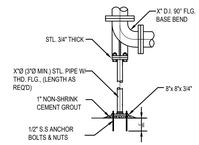
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BASE PLATE DETAIL

N.T.S.



GALVANIZED PIPE SUPPORT DETAIL

N.T.S.

PUMP DATA:		
FLUID		RAW SEWAGE
INSTALLATION LOCATION		LIFT STATION No. 16
PUMP TYPE		SUBMERSIBLE PUMP
RATED POINT	CAPACITY, GPM	400
	TDH, FEET	60
SHUT OFF HEAD, FT		
CONTINUOUS OPERATING RANGE	MAXIMUM TDH, FT	82
	CAPACITY, GPM	100
	MINIMUM TDH, FT	36
	CAPACITY, GPM	880
	NPSHR, FT	6.66
	PUMP EFFICIENCY — AT B.E.P., %	64.1
	PUMP EFFICIENCY — MIN. @ RUNOUT, %	30
PUMP CONSTRUCTION	CASING	CAST IRON ASTM A 48 CLASS 35B
	IMPELLER	CAST IRON ASTM A 48 CLASS 35B
	SHAFT	AISI TYPE 431 STAINLESS STEEL
	BEARINGS L-10 LIFE, HRS.	100,000
	MAX. SHAFT DEFLECTION IN OPERATING RANGE, MILS	–
	MAX. VEL. OF VIBRATIONS IN OP. RANGE, INCH/SEC	–
	SUCTION, INCHES	4"
	DISCHARGE, INCHES	4"
ELECTRIC MOTOR	RATED HP	10.7 HP
	RPM	1750
	VOLTS/PHASE/Hz/S.F.	230/ /60/
	AMBIENT TEMP. FOR MOTOR RATING, °C	68
	MAXIMUM TEMP. RISE, °C	40
	BEARINGS L-10 LIFE, HRS.	100,000
	MAX. VIBRATION AMP., MILS	-
	NOISE LEVEL, dB@1 METER	-
	NEMA DESIGN CODE LETTER	B
	START. CURR. LETTER CODE	G
	INSULATION CLASS	F
	MOTOR RATED HP NOT OVERLOADED AT ANY POINT IN THE PUMPS PERFORMANCE CURVE	
MANUFACTURERS & MODELS *	PUMP	XFP100E CB1 60HZ BY XYLEM
	MOTOR	PE105/4-E-60HZ

* CONTRACTOR MAY CHOOSE APPROVED EQUAL PUMPS AND SUBMIT SHOP DRAWINGS TO THE EOR FOR APPROVAL PRIOR TO INSTALLATION

RUBEL SIDDIQUE, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 67239

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RUBEL SIDDIQUE, PE. ON THE DATE INDICATED HERE USING A SHA AUTHENTICATION CODE.

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CONSTRUCTION SET

NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS
2	CONSTRUCTION PHASE REVISION	05/02/2024	RS

SSN ENGINEERING, LLC
2020 NE 163RD ST, SUITE 300HH
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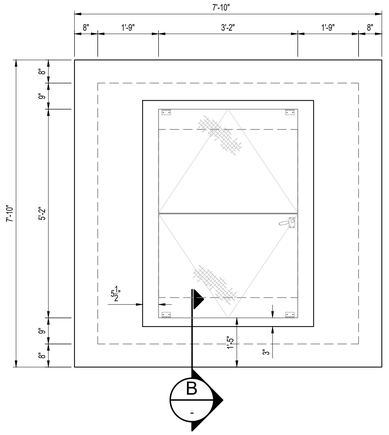
PROJECT NO. 202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

MECH-PLAN-PUMP-DATA

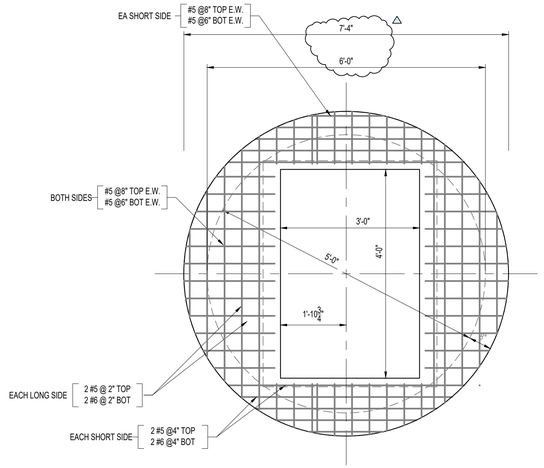
RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 05-02-2024
SHEET NO. C-310



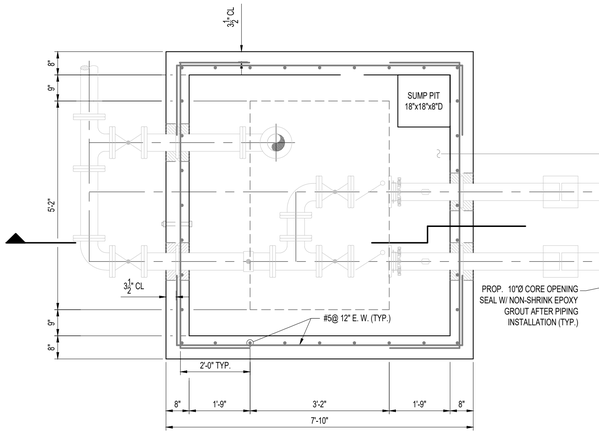
PLAN/VALVE PIT ACCESS

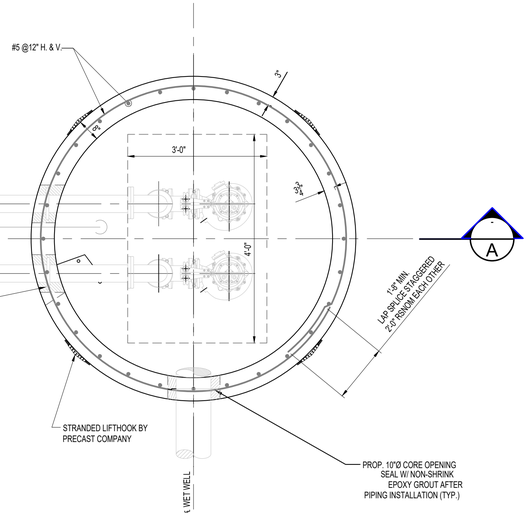
SCALE: 1/2"=1'-0"

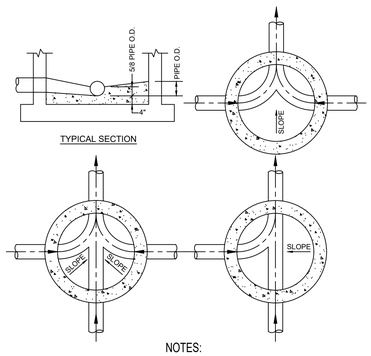


WET WELL TOP SLAB DETAIL

SCALE: 1/2"=1'-0"





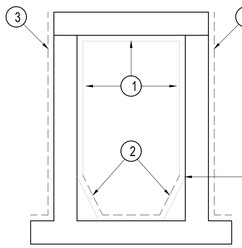


NOTES:

INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT
INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
CHANNELS TO BE FORMED IN ALL MANHOLES TO ACCEPT T.V. CAMERA.
WHEN DIRECTIONAL CHANNELS EXCEEDING 45° OCCUR, AN EXTRA FLOW
LINE ELEVATION DROP OF 0.05' ACROSS MANHOLE SHALL BE PROVIDED.

MANHOLE FLOW CHANNELS

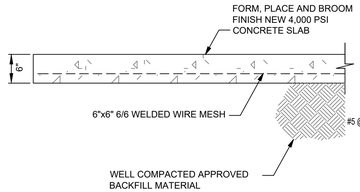
1 DETAIL N.T.S.



1 DETAIL N.T.S.

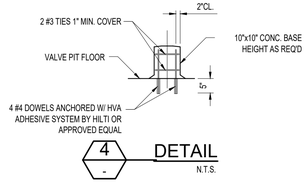
1 SEWPERCOAT (CALCIUM ALUMINATE CEMENT) OR P.P.C. COATING SYSTEM WW-200-/a/ DAMP CONCRETE OR APPROVED EQUAL

2 AND 3 KOP-COAT BITUMASTIC 300-M (COAL-TAR EPOXY).

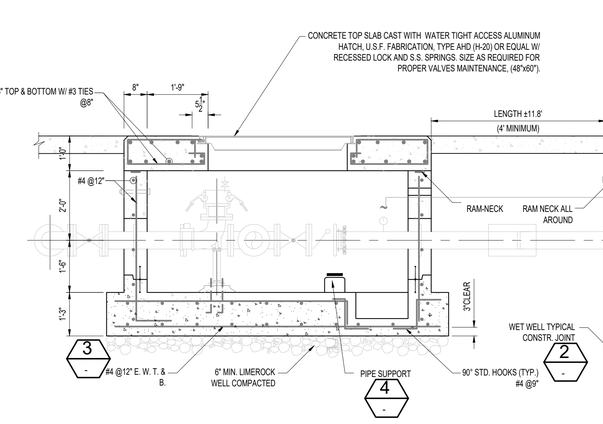


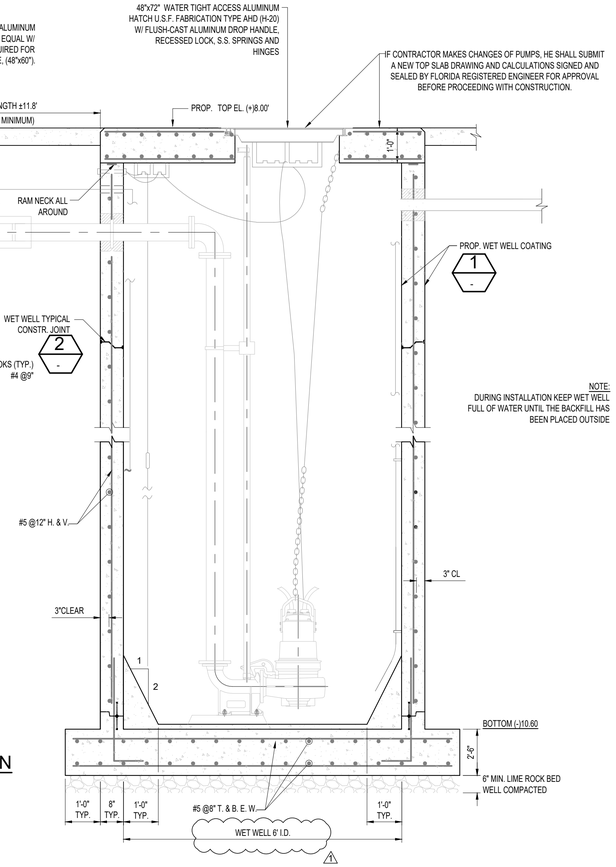
CONCRETE SLAB DETAIL

SCALE: N.T.S



4 DETAIL N.T.S.





A SECTION

SCALE: 1/2"=1'-0"

CONSTRUCTION NOTES:

1. THE STANDARD DRAWINGS PRESENTED ARE BASED ON MINIMUM OF 4" DISCHARGE FORCE MAIN.
2. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES IN APPLICATIONS, ELEVATIONS, AND QUALITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY EXISTING PIPING TO REMAIN BEFORE ORDERING NEW PIPE AND FITTINGS FOR CONNECTIONS. tHE CONTRACTOR SHALL INSPECT AND VERIFY ALL SITE CONDITIONS AND DIMENSIONS, AND COORDINATE WITH OTHER TRADES PRIOR TO CONSTRUCTION. WORK SHALL BE SCHEDULED ACCORDING TO SPECIFIED CONSTRUCTION SEQUENCE.
3. ATTENTION TO AVOID DISTURBING EXISTING ELECTRICAL SERVICE IN THE AREA UNDER CONSTRUCTION (FOR EXISTING FACILITIES ONLY).
4. ALL ELEVATIONS FOR UNDERGROUND UTILITIES SHOWN ARE T.O.P. ELEVATIONS UNLESS OTHERWISE SPECIFIED.
5. ALL PIPING, UNLESS SPECIFIED, TO USE DUCTILE IRON WITH LINING OF SEWER APPLICATION. FITTINGS AND CONNECTIONS UNDERGROUND TO USE MECHANICAL JOINT WITH RESTRAINTS; FITTINGS ABOVE GROUND OR IN VAULT TO USE FLANGE JOINT, OR MECHANICAL JOINT WITH RESTRAINTS
6. APPLY ALL UNDERGROUND FITTING WITH BOLT CONNECTIONS IN DIRECT CONTACT WITH SOIL WITH TWO COATS OF BITUMASTIC OR APPROVED EQUAL.
7. PROVIDE DIELECTRIC FITTINGS BETWEEN TWO DIFFERENT PIPING MATERIALS.
8. PIPE SUPPORTS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
9. PROPOSED WET WELL SHALL BE CYLINDRICAL TYPE MADE OF REINFORCED CONCRETE WITH DEPTH NO GREATER THAN 24 FEET.
10. ALL PUMP CONTROLS SHALL BE SET AS PER DESIGN REQUIREMENTS.
11. ALL PIPING FOR OUTSIDE DROP TO BE DUCTILE IRON WITH LINING OF SEWER APPLICATION. FITTINGS AND CONNECTIONS UNDERGROUND TO USE MECHANICAL JOINT WITH RESTRAINTS.
12. PUMP STARTUP SHALL BE PERFORMED WITH NO EFFLUENT DISCHARGING INTO THE WET-WELL. PUMPS OPERATING POINTS CALCULATED BY PUMP REPRESENTATIVE DURING THE DRAWDOWN TEST SHALL BE NO GREATER THAN 10% OFF THE PUMP CURVE. PROPOSED PUMPS SHALL HANDLE BOTH MAX, MIN AND AVERAGE OPERATING POINTS GIVEN BY THE ENGINEER OF RECORD.
13. THREE PRESSURE GAUGES ARE TO BE INSTALLED INSIDE THE VALVE BOX, ONE GAUGE BEFORE EACH CHECK VALVE AND ONE PRESSURE GAUGE ON THE FORCEMAIN SIDE. PRESSURE DIAL READER SHALL NOT EXCEED 20 PSI.

CONSTRUCTION SET

NO.	REVISIONS	DATE	BY
1	CONSTRUCTION PHASE REVISION	04/16/2024	RS

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SSN ENGINEERING

PROJECT NO.

202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

STRUCTURAL PLANS
AND DETAILS

RUBEL SIDDIQUE, P.E.
FL LICENSE NO. 67239

DRAWN BY: RS
CHECKED BY: RS
DATE: 04-16-2024
SHEET NO.
C-311

ELECTRICAL GENERAL NOTES

I. GENERAL REQUIREMENTS

A. DRAWINGS. THE DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, NOT NECESSARILY SHOWING IN DETAIL OR TO SCALE ALL OF THE MINOR ITEMS. UNLESS SPECIFIC DIMENSIONS ARE SHOWN, THE STRUCTURAL, ARCHITECTURAL, AND SITE CONDITIONS SHALL GOVERN THE EXACT LOCATIONS. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK, CHECK DRAWINGS OF ALL TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE FIELD MODIFICATION IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF VARIOUS TRADES OR FOR PROPER EXECUTION OF THE WORK. SITE CONDITIONS SHALL GOVERN THE EXACT LOCATION OF ALL ELECTRICAL EQUIPMENT, DEVICES, WIRING, CONDUIT, ETC.

ONE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS SHALL BE KEPT ON FILE AT THE SITE FOR THE SOLE USE OF MARKING AS-BUILT DATA. ALL CHANGES SHALL BE MARKED IN RED ON THESE PRINTS AS WORK PROGRESSES.

PRIOR TO EACH REQUISITION FOR PAYMENT, AS-BUILT PRINTS SHALL BE BROUGHT UP TO DATE FOR ACCEPTANCE BY OWNER'S REPRESENTATIVE.

THE COMPLETED SET OF AS-BUILT PRINTS SHALL BE DELIVERED TO THE ARCHITECT/ENGINEER PRIOR TO FINAL PAYMENT FOR INCORPORATION ONTO ORIGINALS.

RISERS ARE DIAGRAMMATIC AND DON'T INTEND TO SHOW EVERY BEND REQUIRED FOR THE INSTALLATION.

B. COORDINATION. CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND/OR CONNECT WITH APPROPRIATE SERVICES ALL ELECTRICAL ITEMS SHOWN ON ANY OF THE ARCHITECTURAL, PLUMBING, AIR CONDITIONING SPRINKLER, INTERIOR DESIGN AND ELECTRICAL DRAWINGS WITHOUT ADDITIONAL EXPENSE TO THE OWNER. IF DISCREPANCIES, CONFLICTS, INTERFERENCES OR OMISSIONS OCCUR BETWEEN DRAWINGS, NOTIFY IN WRITING THE ARCHITECT/ENGINEER IN AMPLE TIME TO PERMIT REVISIONS BEFORE THE BIDS ARE SUBMITTED.

ELECTRICAL CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF PLUG AND CHORD TYPE EQUIPMENT WITH MANUFACTURER AND IS REQUIRED TO PROVIDE ELECTRICAL OUTLETS THAT WILL ACCEPT MANUFACTURER'S SUPPLIED PLUGS.

SEE MECHANICAL DRAWINGS FOR ELECTRICAL REQUIREMENTS AND LOCATION OF A/C UNITS AND ALL OTHER MECHANICAL EQUIPMENT (SOLENOIDS, VAV'S, THERMOSTATS, PUMPS, FANS, SMOKE DETECTORS, DUCT HEATERS, ETC.) THE CONTRACTOR SHALL PROVIDE ALL BRANCH CIRCUIT AND CONTROL WIRING AS INDICATED OR REQUIRED AND IN CONFORMANCE WITH N.E.C. ARTICLE 440 AND MANUFACTURER'S RECOMMENDATIONS. ALL PENETRATIONS SHALL BE MADE WEATHERPROOF DURING CONSTRUCTION AND AFTER FINAL INSTALLATION. A/C EQUIPMENT WIRING, BREAKERS, AND FUSES ARE BASED ON A/C EQUIPMENT SPECIFIED ON CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WIRING, AND OVERCURRENT PROTECTION REQUIREMENTS IF EQUIPMENT USED IS DIFFERENT FROM THAT SPECIFIED. CONTRACTOR SHALL MAKE THESE CHANGES AT NO ADDITIONAL COST TO THE OWNER.

C. TEMPORARY SERVICE. TEMPORARY ELECTRICAL POWER AND LIGHTING SHALL BE FURNISHED, INSTALLED AND MAINTAINED FOR ALL TRADES REQUIRING SAME. SYSTEM SHALL CONSIST OF DISTRIBUTION SYSTEM, PANELBOARDS, GROUNDING, BRANCH CIRCUITS, SWITCHES, RECEPTACLES, OUTLETS. SERVICE SHALL BE ARRANGED FOR WITH POWER COMPANY, IF REQUIRED.

D. PERMITS. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, STATE SALES TAX, FEDERAL EXCISE TAX, ROYALTIES AND OTHER TAXES OR FEES AS REQUIRED FOR INSTALLATION OF A COMPLETE SYSTEM AS OUTLINED HEREIN AND AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND INSURANCE.

E. BASIS FOR BIDS. EQUIPMENT SPECIFIED SHALL BE ADHERED TO. HOWEVER, OWNER HAS FINAL DECISION ON THE TYPE AND QUALITY OF EQUIPMENT TO BE SUPPLIED.

WITHIN 30-DAYS AFTER THE CONTRACT HAS BEEN EXECUTED, A FORMAL REQUEST FOR THE SUBSTITUTION OF PRODUCTS IN PLACE OF THOSE SPECIFIED WILL BE CONSIDERED, UNDER THE FOLLOWING CONDITIONS:

THE REQUEST IS ACCOMPANIED BY COMPLETE DATA ON THE PROPOSED SUBSTITUTION SUBSTANTIATING COMPLIANCE WITH THE CONTRACT DOCUMENTS INCLUDING PRODUCT IDENTIFICATION AND DESCRIPTION, PERFORMANCE AND TEST DATA, REFERENCES AND SAMPLES WHERE APPLICABLE, AND AN ITEMIZED COMPARISON OF THE PROPOSED SUBSTITUTION WITH THE PRODUCTS SPECIFIED, WITH DATA RELATING TO CONTRACT TIME SCHEDULE, DESIGN AND AESTHETIC EFFECT WHERE APPLICABLE.

THE REQUEST IS ACCOMPANIED BY ACCURATE COST DATA ON THE PROPOSED SUBSTITUTION IN COMPARISON WITH THE PRODUCT SPECIFIED, WHETHER OR NOT MODIFICATION OF THE CONTRACT SUM IS TO BE A CONSIDERATION. IF REDESIGN BY THE ARCHITECT OR HIS CONSULTANTS IS REQUIRED TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL COSTS OF THIS REDESIGN SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE. IF ADDITIONAL WORK IS REQUIRED BY OTHER CONTRACTORS TO ACCOMMODATE AN ALTERNATE PRODUCT OR SYSTEM, ALL ADDITIONAL COSTS OF THIS WORK SHALL BE BORNE BY THE CONTRACTOR REQUESTING THE CHANGE.

THE REQUEST SHALL BE ACCEPTED OR REJECTED SOLELY AT THE DISCRETION OF THE OWNER WITH ARCHITECT'S OR ENGINEER'S WRITTEN APPROVAL.

F. CODES & STANDARDS. THE WORK PERFORMED UNDER DIVISION 16 SHALL COMPLY WITH THE LATEST EDITION AND REQUIREMENTS OF THE FOLLOWING:

APPLICABLE LOCAL CODES AND ORDINANCES, NATIONAL ELECTRICAL CODE, AS AMENDED BY LOCAL CODE, ALL APPLICABLE FEDERAL AND STATE CODES., REGULATIONS AND STATUTES, APPLICABLE ENERGY CODE, OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), UNDERWRITERS LABORATORIES, INC. (UL), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICANS WITH DISABILITIES ACT (ADA).

G. MATERIALS & EQUIPMENT. MATERIAL AND EQUIPMENT SHALL BE NEW, STANDARD, CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH EQUIPMENT, AND SHALL BE THE MANUFACTURER'S LATEST DESIGN.

ALL MATERIALS SHALL BEAR THE LABEL OF THE UNDERWRITERS LABORATORY FOR THE INTENDED USE OR SHALL BE MATERIALS APPROVED BY THE CODE ENFORCING AUTHORITIES AND THE ARCHITECT.

FOLLOW THE INSTALLATION DIRECTIONS AND RECOMMENDATIONS OF MATERIAL AND EQUIPMENT MANUFACTURERS.

ALL WORK SHALL BE PERFORMED BY WORKERS SKILLED IN THEIR RESPECTIVE TRADES AND ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER.

INSTALL EQUIPMENT, INCLUDING SWITCHES, CONTROLLERS, FIXTURES AND TRANSFORMERS SUCH THAT REMOVAL OR REPLACEMENT MAY BE READILY ACCOMPLISHED WITHOUT DAMAGE TO EQUIPMENT OR FASTENERS.

IDENTIFY ALL EQUIPMENT, INCLUDING SAFETY SWITCHES, STARTERS, TRANSFORMERS, PANELS, TERMINAL BOXES, MOTORS, SPECIAL OUTLETS, RELAYS. IDENTIFICATION SHALL CORRESPOND TO THE TERMINOLOGY ON THE CONTRACT DOCUMENTS.

EXAMPLES:
1. AHU #1 STARTER
2. TRANSFORMER T-4
3. EMERGENCY STOP STATION
4. PANEL BC

H. SUPPORTING DEVICES DEVICES, INCLUDING ANCHORS, FASTENERS, HANGERS AND SUPPORTS, SHALL BE OF A TYPE DESIGNED OR FABRICATED FOR THE PURPOSE, AND SHALL ADEQUATELY AND SAFELY SECURE THE MATERIAL AND EQUIPMENT AND PRESENT A NEAT APPEARANCE. USE DEVICES WITH CORROSION RESISTANT CHARACTERISTICS FOR THE ATMOSPHERIC CONDITIONS IN WHICH THEY ARE INSTALLED.

I. BACKBOARDS. USE 3/4" THICK EXTERIOR GRADE PLYWOOD, FIRE RETARDANT TREATED, OF WIDTH AND HEIGHT REQUIRED. PLYWOOD SHALL BE NEW AND PAINTED ON ALL SIDES AND EDGES. PAINT BACK SIDE WITH ASPHALTUM WHEN MOUNTED ON MASONRY.

PROVIDE BACKBOARDS FOR ALL GROUP-MOUNTED ELECTRICAL EQUIPMENT, AND FOR COMMUNICATIONS SYSTEMS AS CALLED FOR ON PLANS.

J. RACEWAYS & BOXES ROUTING OF RACEWAYS, INTERCONNECTING OUTLETS AND HOME-RUNS IS UP TO THE ELECTRICAL CONTRACTOR, BUT AFTER COMPLETION OF THE INSTALLATION, HE SHALL SUBMIT TO THE ENGINEER AS-BUILT DRAWINGS OF HIS WORK FOR FUTURE RECORD. DEVICE BOXES SHALL BE INSTALLED FLUSH, CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE INDICATED. ALL CONDUCTORS SHALL BE IN CONDUIT. FOR UNDERGROUND/IN-SLAB LOCATIONS USE GALVANIZED RIGID STEEL (GRS) CONDUIT OR SCHEDULE 40 PVC CONDUIT WITH GROUND WIRE SIZED AS INDICATED OR REQUIRED BY N.E.C., STUB-UPS FROM UNDERGROUND/IN-SLAB PVC CONDUIT SHALL BE GRS. UNDERGROUND GRS SHALL BE COATED WITH TWO COATS OF BITUMASTIC #50 APPLIED WITHOUT THINNING. ALL SECTIONS OF METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND ELECTRICALLY CONTINUOUS. USE ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR CONCEALED WIRING AND ELSEWHERE AS PERMITTED BY THE N.E.C. USE FLEXIBLE METAL CONDUIT FOR FLEXIBLE CONNECTIONS IN ALL WET LOCATIONS. INSTALL A NYLON PULL-CORD IN ALL EMPTY RACEWAYS FOR FUTURE USE. SIZE ALL GUTTERS AND PULL-BOXES PER NEC 370 AND 374. ALL PULL AND JUNCTION BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES.

ALL JUNCTION BOXES SHALL HAVE THE TYPE OF SYSTEM AND VOLTAGE OF CONTAINED CONDUCTORS STENCILED ON THE OUTSIDE OF THE BOX COVER.

EXAMPLES: POWER 120/208 — SOUND
POWER 277/480 — CONTROL 120 V
T.V. — FIRE ALARM

INSTALL EXPOSED CONDUIT PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING LINES. CONDUIT IN CONCRETE MEMBERS AND SLABS SHALL BE LOCATED SO AS NOT TO AFFECT THEIR STRUCTURAL STRENGTH. CONCEAL ALL CONDUIT IN WALLS, ABOVE CEILINGS, IN OR UNDER SLABS OR IN FURRING, EXCEPT IN MECHANICAL AND ELECTRICAL ROOMS.

ROUTE RACEWAYS TO AVOID CONFLICTS WITH THE WORK OF OTHER TRADES.

ALUMINUM CONDUIT WILL NOT BE PERMITTED.
MINIMUM SIZE OUTLET BOX SHALL BE 4" SQUARE BY 1-1/2" DEEP UNLESS APPROVED OR INDICATED OTHERWISE.
USE CAST METAL OUTLET BOXES WITH GASKETED COVERS FOR ALL EXTERIOR AND FOR ALL DAMP LOCATIONS.
PROVIDE APPROVED FIRE STOPPING MATERIALS AT ALL CHASES TO PREVENT DRAFTS, AT PENETRATIONS INTO RATED SPACES, AND OTHER LOCATIONS AS REQUIRED BY CODES.

PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NEC ARTICLE 300.

PROVIDE EXPANSION FITTINGS IN CONDUIT RUNS CROSSING EXPANSION JOINTS IN THE STRUCTURE.

K. CONDUCTORS. UNLESS OTHERWISE INDICATED, ALL CONDUCTORS ARE #12 IN 1/2" CONDUIT. ALL CONDUCTORS SHALL BE COPPER. ACCEPTABLE INSULATION TYPES ARE TW, THW, THHN, THWN, AND XHHW, WITH USES AS RESTRICTED BY THE NEC. AMPACITIES OF CONDUCTORS IS TO BE BASED ON ARTICLE 310 OF THE NEC WITH UL LIMITATIONS: 60 DEG. RATING FOR SIZES #14 THROUGH #1; 75 DEG. FOR #1/0 AND LARGER. CABLES 3/0 AND LARGER SHALL BE TERMINATED WITH PRESSURE CRIMP CONNECTORS.

FOR 20 AMP BRANCH CIRCUITS GREATER THAN 100 FT. IN LENGTH, ONE WAY, UP TO 200 FT. USE #10 WIRE; OVER 200 FT., USE #8 WIRE.
INCREASE CONDUIT SIZE AS REQUIRED FOR THE LARGER CONDUCTORS. THIS SUPERSEDES WIRE SIZES CALLED FOR ON THE DRAWINGS.

CONDUCTORS SIZE #10 AND SMALLER SHALL HAVE INSULATION COLORED FOR PHASES A, B, C, AND N RESPECTIVELY AS FOLLOWS FOR 3 PHASE SYSTEM:

120/208 VOLTS: BLACK, RED, BLUE AND WHITE
120/240 VOLTS: BLACK, ORANGE (HIGH), BLUE AND WHITE
277/480 VOLTS: BROWN, ORANGE, YELLOW AND GRAY

ALL CONDUCTORS OF THE SAME PHASE IN PARALLELED FEEDERS OR SERVICES SHALL BE SOLIDLY CONNECTED TOGETHER AT THEIR TERMINATION IN A WIREWAY OR SPLICE BOX. MAKE CONDUCTOR LENGTH FOR PARALLEL FEEDERS IDENTICAL.

THE PHASE DESIGNATION OF ALL SECONDARY CONDUCTORS SHALL BE THE SAME AND SHALL BE INDICATED IN OR ON ALL 3 PHASE OUTLETS, TRANSFORMERS, PANELBOARDS, AND DISCONNECT SWITCHES, AND THEY SHALL BE CONNECTED WITH UNIFORM PHASE SEQUENCE.

MAINTAIN A, B, C PHASE RELATION LEFT TO RIGHT WHEN VIEWED FROM THE FRONT.

TAG ALL FEEDER CONDUCTORS AND IDENTIFY MAJOR CONDUITS IN OR AT WIREWAYS, PANELS, PULL BOXES, SWITCHBOARDS, MOTOR CONTROLLERS, CABINETS AND SIMILAR ITEMS TO ASSIST IN FUTURE CIRCUIT TRACING. CONDUCTOR TAGS SHALL BE NONCONDUCTIVE. IDENTIFICATION SHALL CORRESPOND TO THE CONTRACT DOCUMENTS.

COMMUNICATIONS, DATA, AND/OR WIRING WHICH IS NOT INSTALLED IN CONDUIT, AND WHICH IS ROUTED THROUGH ENVIRONMENTAL AIR SPACES, SHALL COMPLY WITH THE REQUIREMENTS OF NEC 300-22. PROVIDE TRAPEZE HANGER ASSEMBLY FOR PLENUM CABLES USING 3/8" DIAMETER HANGER ROD AND CHANNEL ASSEMBLY TO SUPPORT CABLE BUNDLES EVERY 4 FEET. ALL BUNDLES SHALL BE PROPERLY STRAPPED WITH SELF-LOCKING CABLE TIES. EXPOSED CABLES SHALL NOT LIE ON TOP OF CEILING TILES OR LUMINARIES.

L. GROUNDING. END-TO-END LIGHTING FIXTURES SHALL BE CONTINUOUSLY BONDED.

GROUNDING CONTACTS OF RECEPTACLES SHALL BE CONNECTED TO A SOLIDLY GROUNDED CONDUIT SYSTEM OR TO A SYSTEM GROUNDING CONDUCTOR (NOT THE SYSTEM NEUTRAL) BY A STRANDED COPPER WIRE NOT SMALLER THAN #12 AWG OR SHALL BE GROUNDED IN SOME OTHER APPROVED MANNER; THE RESISTANCE BETWEEN THE CONTACTS AND SERVICE GROUND SHALL NOT EXCEED 3 OHMS.

ALL CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

M. SAFETY SWITCHES/CIRCUIT BREAKER DISCONNECTS. SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE KD, FUSIBLE, OR NON-FUSIBLE, WITH POLES, AMPERE, VOLTAGE AND HORSEPOWER RATINGS INDICATED AND SHALL HAVE SOLID NEUTRALS. LUGS SHALL BE U.L. LISTED FOR COPPER-ALUMINUM.

ENCLOSURES FOR SAFETY SWITCHES SHALL BE NEMA-1, GENERAL PURPOSE, EXCEPT THAT SWITCHES INDICATED (WP) WEATHERPROOF, SHALL BE NEMA-3R ENCLOSURES WITH SUITABLE GASKETS AND BONDING MEANS.

SWITCHES AND DISCONNECT SHALL BE AS MANUFACTURED BY SQUARE "D", OR APPROVED EQUAL.

CIRCUIT BREAKER DISCONNECTS MAY BE USED IN LIEU OF SAFETY SWITCHES PROVIDING THEY COMPLY WITH THE SAFETY SWITCH REQUIREMENTS AND ARE SUPPLIED WITHIN THEIR RATINGS AND A SCHEDULE IS SUBMITTED FOR APPROVAL.

P. MOLDED CASE CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL CONFORM TO APPLICABLE FEDERAL SPECIFICATIONS AND NEMA STANDARDS. CIRCUIT BREAKERS SHALL BE OF THE AMPERE RATING, VOLTAGE RATING, NUMBER OF POLES AND CLASS OR INTERRUPTING CAPACITY (I.C.) AS INDICATED. INTERRUPTING RATINGS ARE GIVEN IN ROOT MEAN SQUARE (RMS), SYMMETRICAL AMPERES BASED ON NEMA TEST PROCEDURES. LUGS AND TERMINALS SHALL BE U.L. APPROVED FOR COPPER-ALUMINUM. ACCESSORIES SHALL BE 120 VOLT. A.I.C. OF BREAKER TO BE INSTALLED ON EXIST. PANELS SHALL MATCH EXIST.

EACH CIRCUIT BREAKER SHALL HAVE A TRIP UNIT FOR EACH POLE WITH ELEMENTS PROVIDING INVERSE TIME DELAY UNDER OVERLOAD CONDITIONS AND INSTANTANEOUS MAGNETIC TRIP FOR SHORT CIRCUIT PROTECTION UNLESS INDICATED AS NON-AUTOMATIC. TRIP ELEMENTS SHALL OPERATE A COMMON TRIP BAR TO OPEN ALL ELEMENTS. BREAKERS USED FOR SWITCHING SHALL BE RATED FOR SWITCHING DUTY.

O. FUSES. FUSES SHALL CONFORM TO NEMA AND U.L. AND SHALL BE OF THE VOLTAGE, CLASS AND AMPERE RATING INDICATED.

FUSES FOR MAIN DISCONNECT DEVICES SHALL BE HIGH INTERRUPTING CAPACITY, TIME DELAY, OR TYPE SUITABLE FOR DEVICE. PROVIDE ONE SPARE SET MOUNTED INSIDE THE CUBICLE, FOR EACH MAIN DEVICE.

FUSES FOR MOTORS AND ENCLOSED SWITCHES, NEMA CLASS K-5, UNLESS INDICATED OTHERWISE, DUAL ELEMENT, TIME DELAY. BUSSMAN – FUSETRON, FRN AND FRS, OR EQUAL.

OTHER FUSES SHALL BE AS INDICATED.

P. WIRING DEVICES. DEVICES SHALL BE AS SPECIFIED IN CONTRACT DOCUMENTS.

INSTALL PLATES AND COVERS ON ALL OUTLETS. INSTALL ALL DEVICES UNIFORMLY IN EACH AREA.

PLATES SHALL BE ALIGNED VERTICALLY AND HORIZONTALLY AND ALL EDGES SHALL BE IN FIRM CONTACT WITH SURROUNDING WALL FINISH.

MOUNTING HEIGHTS (TO CENTER LINE OF BOX):

GENERALLY MOUNT RECEPTACLES 18" AFF (ABOVE FINISHED FLOOR) UNLESS NOTED OTHERWISE.
MOUNT SWITCHES AND DIMMERS AT 48" AFF.
MOUNT OUTLETS OVER MIRRORS 8" HIGHER THAN MIRROR.
MOUNT OUTLETS OVER COUNTERS AND CENTERED IN THE BACK SPLASH WHERE IT OCCURS; RECEPTACLE SHALL BE HORIZONTAL.

ADJUST OUTLET HEIGHTS IN CERAMIC TILE WALLS TO BE ENTIRELY IN OR ENTIRELY OUT OF THE TILE. OUTLETS MAY BE HORIZONTAL TO MEET SPACE CONDITIONS.

TEST EACH SOCKET OF EACH OUTLET WITH A DEVICE INTENDED FOR THE PURPOSE.

ALL DEDICATED DATA EQUIPMENT BRANCH CIRCUITS SHALL FEED THIS TYPE OF EQUIPMENT ONLY AND SHALL CARRY A DEDICATED GROUNDING CONDUCTOR TO THE PANEL TO BE CONNECTED TO THE GROUNDING SYSTEM.

III DEMOLITION

REMOVE EXISTING RECEPTACLES, TELEPHONE, SWITCHES, AND ANY ELECTRICAL DEVICES IN WALLS TO BE DEMOLISHED. RELOCATE ANY OF THESE DEVICES AS INDICATED OR REQUIRED BY THE DRAWINGS. PROVIDE ARCHITECT WITH AS-BUILT DRAWINGS OF FINAL INSTALLATION FOR RECORD PURPOSES. CONTRACTOR IS NOTIFIED THAT NOT ALL EXISTING DEVICES MAY HAVE BEEN INDICATED ON THE DRAWINGS AND THAT SOME EXISTING ELECTRICAL DEVICES MAY NOT HAVE BEEN SHOWN IN THEIR ACTUAL LOCATION. CONTRACTOR IS REQUIRED TO VISIT SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO DETERMINING THE WORK THAT NEEDS TO BE ACCOMPLISHED AS PART OF HIS/HER BID.

THE WORK SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, CUTTING, EXTENDING, CONNECTING, REPAIRING, ADAPTING, AND OTHER WORK COINCIDENTAL HERETO, TOGETHER WITH SUCH TEMPORARY INSTALLATIONS AS MAY BE NECESSARY TO SATISFY THE DEMOLITION PROGRAM. APPROVAL SHALL BE SECURED FROM THE LANDLORD/ARCHITECT PRIOR TO CUTTING/DRILLING ANY STRUCTURAL SUPPORT.

ALL BUILDING CONSTRUCTION AFFECTED BY THE REMOVAL, RELOCATION, INSTALLATION OF ANY PIECE OF EQUIPMENT SHALL BE REPAIRED AND FINISHED AS REQUIRED TO MATCH EXISTING CONDITIONS OR AS DIRECTED BY THE ARCHITECTURAL DRAWINGS, SPECIFICATIONS, OR OWNER'S REPRESENTATIVE.

WHEN ELECTRICAL DEVICES ARE INSTALLED IN PARTITIONS OR CEILINGS TO BE REMOVED, THE ELECTRICAL CONTRACTORTRACTOR SHALL DISCONNECT THEM UP TO THE NEXT OUTLET TO REMAIN OR BACK TO THE PANELBOARD. IF EXISTING TO REMAIN OUTLETS ARE FED THROUGH DEMOLISHED PARTITIONS OR CEILINGS, THE CIRCUIT SHALL BE REARRANGED TO MAINTAIN CIRCUIT CONTINUITY. WIRE SHALL BE REMOVED BACK TO SOURCE FROM INACCESSIBLE RACEWAYS NOT REUSED. INSTALL BLANK PLATES ON FLUSH OUTLETS NOT REUSED. PLATE COLOR SHALL MATCH ADJACENT SURFACE AS NEAR AS POSSIBLE IN FINISHED AREAS.

ALL ELECTRICAL EQUIPMENT SHALL BE REMOVED FROM STRUCTURE TO BE REMOVED. ACCESSIBLE RACEWAYS, WIRES, BOXES, SWITCHES, AND OTHER ELECTRICAL ITEMS ASSOCIATED WITH THIS WORK SHALL BE REMOVED IF NOT REQUIRED FOR NEW EQUIPMENT TO CONTINUE IN SERVICE.

ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS DIRECTED BY OWNER.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH NEC 2017, FBC 2020, LOCAL CODES AND ORDINANCES AND ALL STANDARDS OF CONSTRUCTION ESTABLISHED BY THE LANDLORD.
2. SUBMIT SHOP DRAWINGS FOR ACCEPTANCE BY THE ARCHITECT AND/OR ENGINEER BEFORE PROCEEDING WITH THE PURCHASE OR INSTALLATION OF THE EQUIPMENT AND MATERIALS. NO FACSIMILES OR FACSIMILE COPIES SHALL BE ACCEPTED.
3. ALL CONDUCTORS SHALL BE THW OR THWN COPPER. ALL EXPOSED CONDUITS SHALL BE RUN AS NEAT AS POSSIBLE. P.V.C. CONDUIT SHALL ONLY BE USED IN SLAB OR UNDERGROUND AT A MINIMUM DEPTH OF 24 INCHES.
4. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTION TO ALL VIBRATING EQUIPMENT SUCH AS MOTORS, ETC.
5. ALL ELECTRICAL EQUIPMENT SHALL BE APPROVED AS SAFE FOR USE IN THE U.S. WORKPLACE, AS PER A "NRTL" RECOGNIZED ORGANIZATION (U.L., C.S.A., ETC.)
6. ALL EQUIPMENT SHALL BE MOUNTED ABOVE FLOOD CRITERIA.
7. PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. NOTIFY THE ARCHITECT OR ENGINEER OF ANY DISCREPANCIES. THE CONTRACTOR SHALL QUALIFY THE BID ACCORDINGLY.
8. THE DESIGNATED NUMBERS ARE SHOWN ON THESE PLANS AS PER THE ORIGINAL DOCUMENTS OR SITE INVESTIGATION FOR THE EXISTING CONDITIONS AND ARE FOR IDENTIFICATION ONLY. CONTRACTOR SHALL VERIFY AND SHOW THE CIRCUIT NUMBERS ACTUALLY USED IN THE INSTALLATION ON THE "AS-BUILT" DRAWINGS.
9. CONTRACTOR SHALL WARRANT ALL WORK TO BE FREE OF DEFECT IN WORKMANSHIP AND MATERIALS FOR A PRIOR OF ONE YEAR AFTER ACCEPTANCE OF THE PROJECT.

ELECTRICAL NOTES:

1. ALL CONTRACTOR WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES
2. CONTRACTOR SHALL SEAL OFF CONDUIT RUNS
3. CONTRACTOR TO MOUNT LIGHTNING ARRESTOR AT SWITCH DISCONNECT
4. CONTRACTOR SHALL VERIFY POWER SOURCE PRIOR TO ORDERING EQUIPMENT
5. NEUTRAL TO BE SUPPLIED FOR 230V-3 PHASE POWER.

SYMBOLS LEGEND

- G.F.I. RECEPTACLE 15 AMP/120 VOLT (TAMPER RESISTANT)
- J — JUNCTION BOX
- MOTOR

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PH (954) 944-3272
FBPE NO. CA00029695
WWW.SSNENGINEERING.COM

SSN ENGINEERING

PROJECT NO. 202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

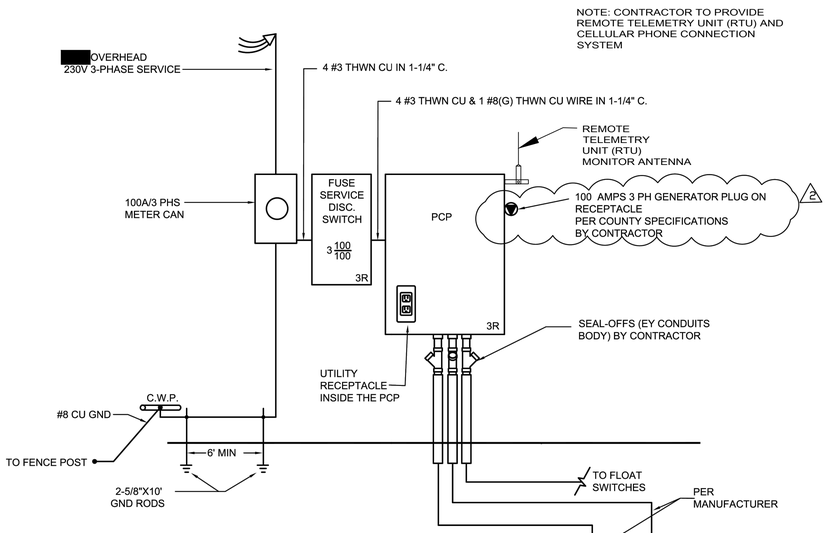
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LOCATION MAP

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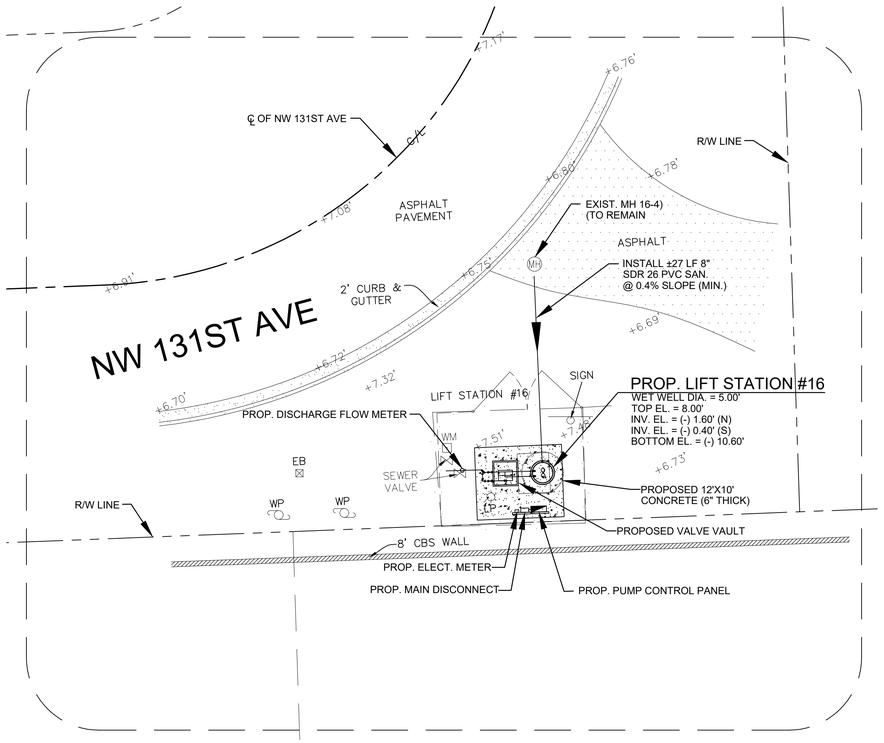


ELECTRICAL RISER DIAGRAM

N.T.S.

NOTES:

1. ENGINEER CALCULATED A FAULT CURRENT OF 5.50K AIC BASE ON CALCULATED FAULT CURRENT PROTEK RECOMMENDS 10K AIC. CONTRACTOR SHALL COORDINATE WITH FPL FOR ACTUAL FAULT CURRENT. EQUIPMENT INSTALLED SHALL WITHSTAND FPL'S AVAILABLE FAULT CURRENT. PRIOR TO ORDERING THE ELECTRICAL SWITCHGEAR THE CONTRACTOR SHALL OBTAIN FROM FPL A LETTER STATING THE AVAILABLE FAULT CURRENT. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO DO SO.
2. ALL EQUIPMENT TO BE MOUNTED ABOVE FLOOD CRITERIA.
3. COORDINATE NEW SERVICE REQUIREMENTS WITH FPL.



ELECTRICAL PLAN FOR LIFT STATION-16

1" = 10'

Assumed Fault Current Calculation

		kVA =	500		
		E =	240		
I = kVA x 1000 = trans. FLA / E x 1.732		trans. FLA =	1203		
Isca = trans. FLA x 100 / transformer Z		=	1203		
			5	%	
Isca = ampere short-circuit current RMS symmetrical.		Isca =	24,057	amperes	
Fault Current from	POINT TO POINT METHOD				
	Length (distance) FEET	L =	90	Three Phase 240/120	
	(ASC)	Isca =	24,057		
	# conductors per phase	N =	1	Copper in Nonmetallic Raceway	
	Phase conductor constant	C =	4,635	Phase Conductor	3
'f ' factor = 1.732 x L x I / N x C x E L-N	Volt Line to Line	E L - L =	240	Volt	
		f =	3.371		
	Neutral conductor constant	C =	4,635	Neutral Conductor	3
	Volt Line to Neutral	E L - N =	120	Volt	
		f =	6.741		
Multiplier M = 1 / 1 + f					
	Line to Line	M =	0.229		
	Line to Neutral	M =	0.129		
Isca x M = fault current at terminals of main disconnect L- L =			5,504	amperes	
Isca x M = fault current at terminals of main disconnect L- N =			3,108	amperes	

LIFT STATION LOAD TABULATION

SERVICE VOLTAGE: 120/240V. Ø

DESCRIPTION	LOAD	AMPACITY
① SUBMERSIBLE WASTEWATER PUMPS	2 @ 5 HP	= 14.60 A
CPT + SPARE PROVISIONS	10KVA	= 24.04 A
CONNECTED LOAD		= 38.64 A
② SERVICE ENTRANCE =	38.64 A + (0.25)(7.3)	= 40.46 A

NOTES:
① AMPACITIES PER TABLE 430-150 OF THE NATIONAL ELECTRIC CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRIC CODE.

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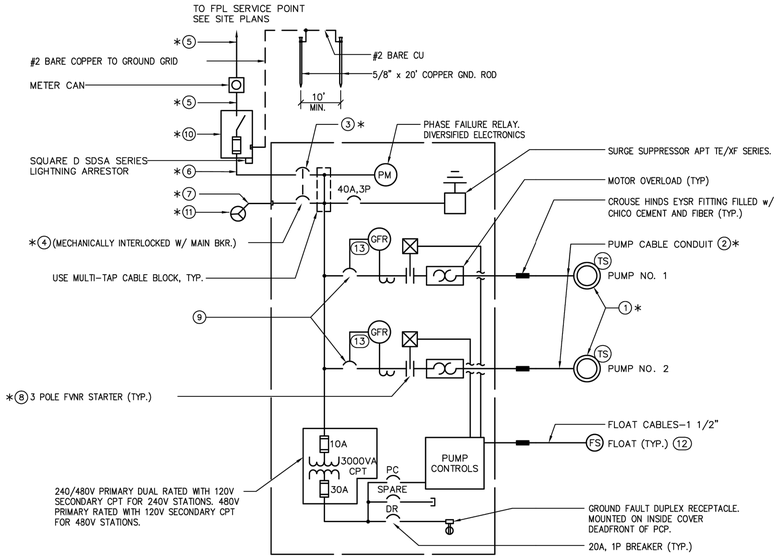
PROJECT NO.
202201004

CITY OF OPA-LOCKA
LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

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NOTES:

(12) REFER TO CONTROL DIAGRAMS FOR EXACT NUMBER OF FLOAT SWITCHES REQUIRED.

(13) MOTOR CIRCUIT PROTECTOR WITH ADJUSTABLE MAGNETIC TRIN AND GROUND FAULT PROTECTION EQUIPMENT. OPENS MOTOR CIRCUIT PROTECTOR ON GROUND FAULT. PROVIDE ADDITIONAL ALARM CONTACT FOR COMMON ALARM INDICATION. GROUND FAULT CENSOR TYPE GC BY SQUARE D OR APPROVED EQUAL.

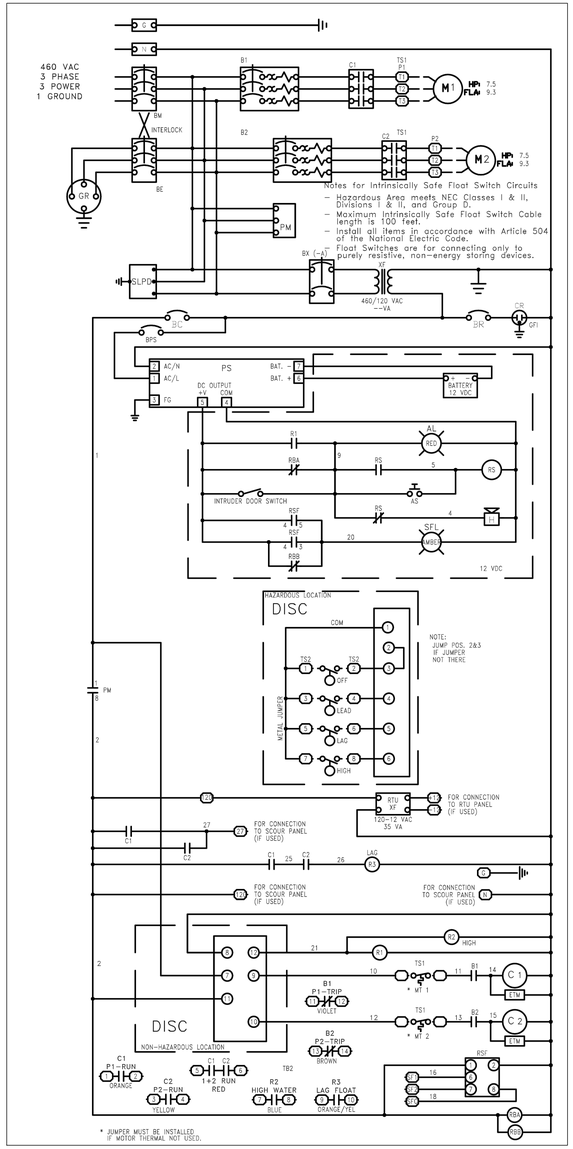
TYPICAL PUMP CONTROL PANEL (PCP) SINGLE LINE DIAGRAM

* ADDITIONAL REQUIREMENTS AND NUMERICAL DESIGNATIONS.

PCP CONTROL PANEL NOTES

CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR COMPLIANCE REVIEW AND APPROVAL BY OWNER / ENGINEER OF RECORD BEFORE INSTALLATION

			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
STATION NUMBER	SERVICE VOLTAGE	EXISTING MOTOR SIZE (HP)	NEW MOTOR SIZE (HP)	PUMP CABLE CONDUIT SIZE	PANEL MAIN BKR	EMERGENCY MAIN BKR.	SERVICE CONDUIT CONDUCTORS	LOAD CONDUIT AND CONDUCTORS	EMERGENCY CONDUCTORS	STARTER SIZE	MOTOR BREAKER	FUSED SERVICE DISCONNECT SWITCH/FUSES	GENERATOR RECEPTACLE
15	120/240V, 3ø, 4W	UNKNOW	2 @ 5	2"	100A,3P	100A,3P	4#2-1 1/2"	3#2 & 1#6GND-1 1/2"	3#2 & 1#6GND	1	50A,3P	100A,3P/ 100A	SUPPLIED BY CONTRACTOR



DUPLEX CONTROL DIAGRAM

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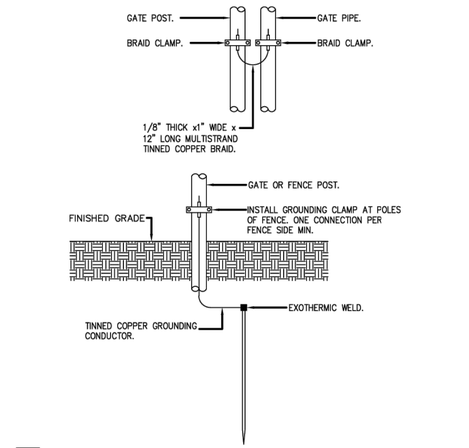
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LIFT STATION 16 REHABILITATION
OPA-LOCKA, FLORIDA
MIAMI-DADE FLORIDA

ELECTRICAL PLAN

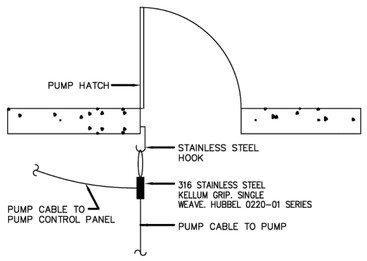
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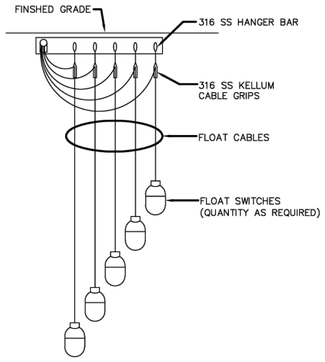
1 TYPICAL GATE OR FENCE POST GROUNDING

N.T.S.



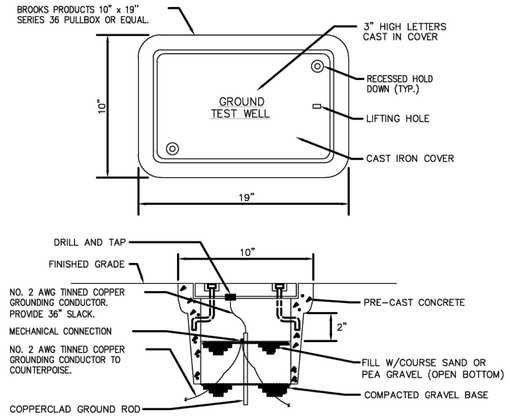
2 PUMP CABLE MOUNTING DETAIL

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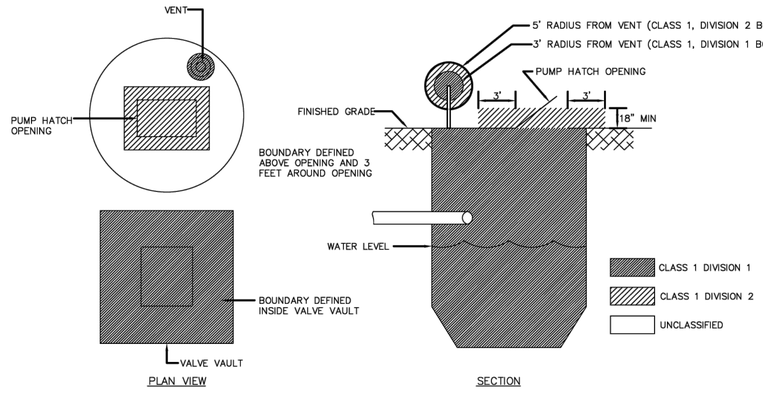
3 FLOAT SWITCH MOUNTING DETAIL

N.T.S.



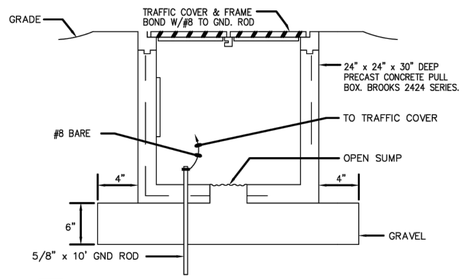
4 GROUND TEST WELL

N.T.S.



5 NFPA BOUNDARY CLASSIFICATION

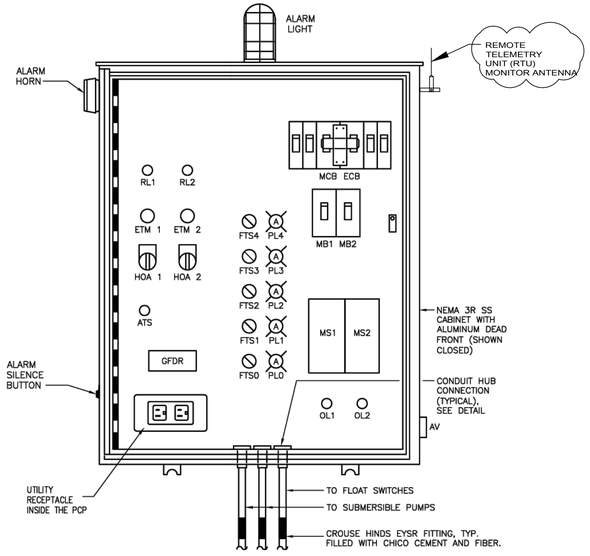
N.T.S.



6 PULL BOX DETAIL

N.T.S.

NOTE: CONTRACTOR TO PROVIDE REMOTE TELEMETRY UNIT (RTU) AND CELLULAR PHONE CONNECTION SYSTEM



NOTE: PANEL COVER NOT SHOWN

PUMP CONTROL PANEL FRONT VIEW

(TYPICAL FOR ALL LIFT STATIONS)

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MIAMI-DADE FLORIDA

ELECTRICAL PLAN

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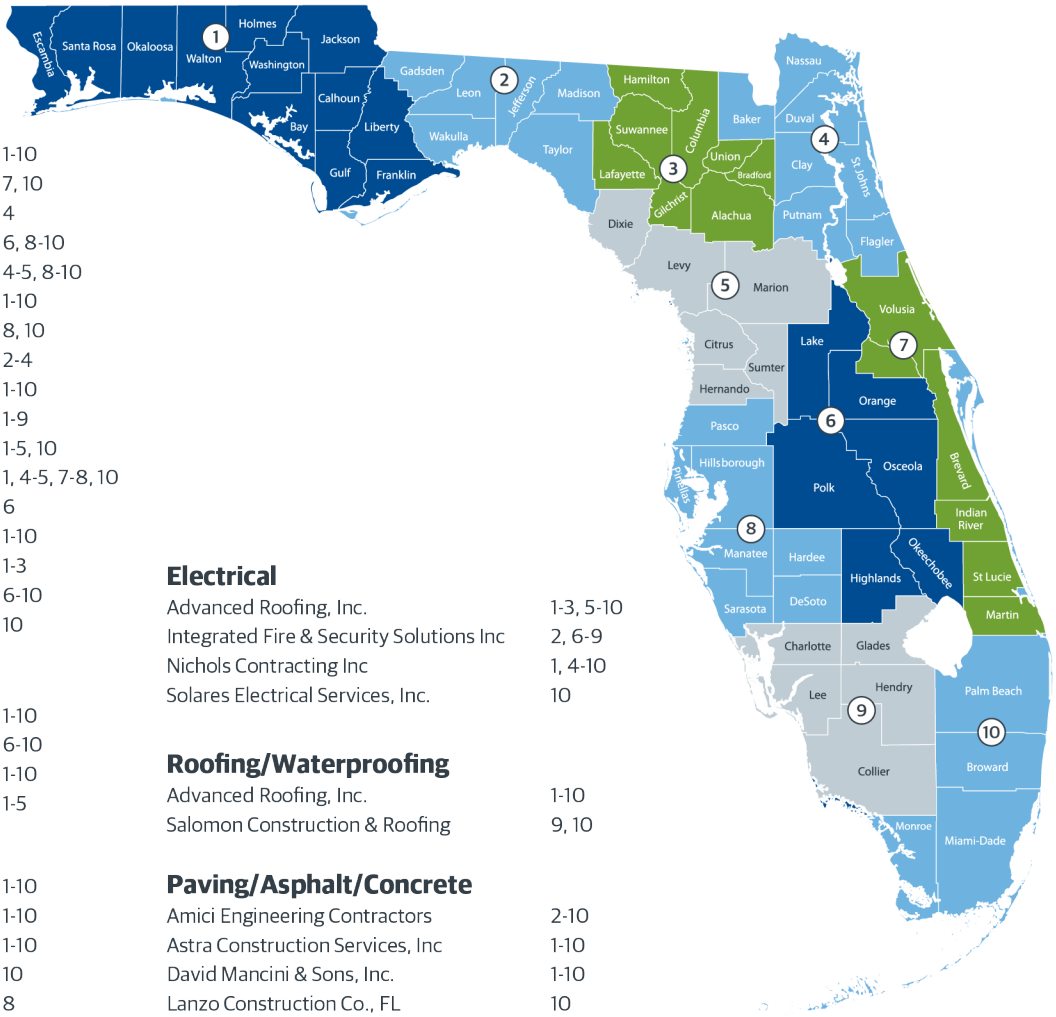
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Contractor Service Areas



General Contractor

Advanced Roofing, Inc.	1-10
Amici Engineering Contractors	7, 10
Astra Construction Services, LLC	4
Centennial Contractors Enterprises	6, 8-10
David Mancini & Sons, Inc.	4-5, 8-10
F.H. Paschen	1-10
Harbour Construction Inc.	8, 10
HCR Construction, Inc.	2-4
Jewel of the South, Inc.	1-10
JOC Construction LLC	1-9
Johnson-Laux Construction	1-5, 10
Nichols Contracting Inc.	1, 4-5, 7-8, 10
Ovation Construction Company	6
Place Services, Inc.	1-10
RAM Construction & Development, LLC	1-3
Shiff Construction & Development	6-10
Team Contracting, Inc.	10

HVAC/Mechanical

Advanced Roofing, Inc.	1-10
Hall Mechanical & Air Conditioning LLC	6-10
Mechanical Services of Central Florida, Inc.	1-10
Millers Plumbing & Mechanical, Inc.	1-5

Civil Construction

Amici Engineering Contractors	1-10
Astra Construction Services, Inc	1-10
David Mancini & Sons, Inc.	1-10
Lanzo Construction Co., FL	10
McKenzie Contracting LLC	8

Electrical

Advanced Roofing, Inc.	1-3, 5-10
Integrated Fire & Security Solutions Inc	2, 6-9
Nichols Contracting Inc	1, 4-10
Solares Electrical Services, Inc.	10

Roofing/Waterproofing

Advanced Roofing, Inc.	1-10
Salomon Construction & Roofing	9, 10

Paving/Asphalt/Concrete

Amici Engineering Contractors	2-10
Astra Construction Services, Inc	1-10
David Mancini & Sons, Inc.	1-10
Lanzo Construction Co., FL	10

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IFB #111821
Invitation for Bids
for
Indefinite Delivery-Indefinite Quantity
Construction Contracts
in the
State of Florida

Bid Due Date: November 18, 2021, 4:30 p.m., Central Time

Sourcewell, a State of Minnesota local government entity and public agency, is issuing this Invitation for Bid (IFB) on behalf of its participating entities to create indefinite delivery-indefinite quantity construction (IDIQ) contracts that may be used by those participating entities for projects related to construction or the repair, alteration, modernization, or renovation of buildings, structures, or other real property.

This IFB consists of the following parts:

1. Invitation for Bids, including Table of Solicitations and Map of Service Regions
2. Template IDIQ Construction Contract
3. IDIQ Contract General Terms and Conditions
4. Construction Task Catalog
5. Technical Specifications

A full copy of the IFB can be found on the Sourcewell Procurement Portal (https://proportal.sourcewell-mn.gov), and only bids submitted through the Sourcewell Procurement Portal will be considered. Bids are due no later than November 18, 2021 at 4:30 p.m. Central Time, and late bids will not be considered.

Solicitation Schedule

Notice of Solicitation Published:	October 14, 2021
Pre-bid Conference:	October 28, 2021, 10:00 a.m., Central Time
Question Submission Deadline:	November 11, 2021, 4:30 p.m., Central Time
Bid Due Date:	**November 18, 2021**, 4:30 p.m., Central Time Late responses will not be considered.
Opening:	November 18, 2021, 6:30 p.m., Central Time. See Article VII. G. for more information.

I. ABOUT SOURCEWELL AND ITS PARTICIPATING ENTITIES

Sourcewell is a State of Minnesota local government agency and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) that facilitates a competitive public solicitation and contract award process for the benefit of its participating entities across the United States. Sourcewell's solicitation process complies with State of Minnesota law and policies.

Sourcewell's participating entities in the State of Florida may include:

- Federal and state government
- Cities, towns, and counties/parishes
- Education service cooperatives
- K-12 and higher education
- Tribal government
- Some nonprofit
- Other public entities

For a listing of current participating entities visit Sourcewell's website: https://www.sourcewell-mn.gov/sourcewell-for-vendors/agency-locator.

II. INDEFINITE DELIVERY-INDEFINITE QUANTITY CONSTRUCTION PROGRAM

Sourcewell is soliciting bids for its IDIQ construction program. IDIQ contracting offers participating entities access to competitively solicited and awarded contracts for construction projects related to repair, alteration, modernization, or renovation of buildings, structures, or other real property.

Sourcewell has engaged The Gordian Group, Inc. (Gordian) to provide management of its IDIQ construction program. In this role, Gordian provides support to Sourcewell in the administration of the program, including: preparing Construction Task Catalogs and related technical specifications, providing information management systems and licenses to contractors, training to contractors, administering fee collection, consulting services to Sourcewell, and assisting with proposal package or work order development. Participating Entities access Sourcewell IDIQ contracts resulting from this IFB through relevant purchasing authority, and work directly with Contractors awarded through this IFB.

Under IDIQ, an awarded Contractor furnishes management, labor, materials, equipment, and incidental design support needed to perform the work. Details of the program's operation can be found within the Contract, and General Terms and Conditions document included in this IFB.

III. REQUIRED BIDDER QUALIFICATIONS

In determining a Bidder's responsibility and ability to perform under a Contract, Sourcewell has the right to investigate and request information concerning the financial condition, experience record, personnel, equipment, facilities, principal business location and organization of the Bidder, the Bidder's record with environmental regulations, and the claims and litigation history of the Bidder. Sourcewell reserves the right to verify the Bidder's information and may request clarification from a Bidder.

A. A Bidder's business must be normally engaged in performing the type of work specified within this IFB and must have adequate organization, facilities, equipment, and personnel to ensure prompt and efficient service to a Sourcewell participating entity (as solely determined by Sourcewell).

B. Bidders responding to a General Construction solicitation must be willing and capable of providing all or a majority of the various types of construction work as specified in the Construction Task Catalog. Bidder may provide the work using its own forces or by using subcontractors.

C. Bidders responding to the **HVAC/Mechanical, Electrical, Roofing/Waterproofing, Paving/Asphalt/Concrete, and Civil Construction** solicitations will perform at least 51% of all contracted work with its own organization and forces. The percentage calculation does not include field superintendents or office management personnel.

IV. BID OVERVIEW AND PREPARATION INSTRUCTIONS

A. REQUESTED INDEFINITE DELIVERY-INDEFINITE QUANTITY CONSTRUCTION SERVICES. The IQC services specified in the table of solicitations listed below, include General Construction, HVAC/Mechanical, Electrical, Roofing/Waterproofing, Paving/Asphalt/Concrete, and Civil Construction. At this time, no specific projects have been identified; work and work volume from any resulting contract are not guaranteed. Specific description of work and summary of duties for each category of construction can be found in the Technical Specifications.

B. PREPARATION INSTRUCTIONS. Strict compliance with the following instructions is required for properly preparing a bid. Before submitting a bid, it is the responsibility of each Bidder to:

1) Examine the IFB Documents thoroughly;
2) Consider all applicable federal, state and local laws, regulations, ordinances, and procurement codes that may affect costs, progress, performance, or furnishing of a participating entity's work; and,
3) Notify Sourcewell of all conflicts, errors, or discrepancies in theu IFB Documents of which Bidder knows.

The submission of a Bid constitutes a representation by the Bidder to Sourcewell that it has complied with the above requirements and, that without exception, its Bid is premised upon performing and furnishing the Work required by this IFB.

Bidders should include all relevant information in its bid. Sourcewell cannot consider information that is not provided in the bid.

C. ESTIMATED CONTRACT VALUE AND USAGE. Based on past volume of similar contracts, the estimated annual value of each contract resulting from this IFB is as stated in the Table of Solicitations. Sourcewell anticipates considerable activity under the contract(s) awarded from this IFB; however, work and work volume from any resulting contract are not guaranteed.

V. BID PRICING

A. CONSTRUCTION TASK CATALOG AND ADJUSTMENT FACTOR. In order to evaluate bid pricing and the retain consistency within contract pricing, Sourcewell uses Gordian's proprietary Construction Task Catalog (CTC). The CTC as a comprehensive listing of specific repair and construction related Tasks, together with a specific unit of measurement and a pre-set unit price (Unit Price). All Unit Prices within the CTC are based on local labor, material, and equipment prices for the direct cost of construction.

Under this IFB, Bidders will offer price adjustments (Adjustment Factors) that will be applied to CTC Unit Prices. The Adjustment Factors represent either an increase to the present Unit Prices (such as 1.1000) or a decrease from the preset Unit Prices (such as 0.9800).

A participating entity's cost for a specific task will be determined by multiplying the preset Unit Prices by the appropriate quantities and by the appropriate Adjustment Factor (e.g., specific task cost = preset unit price in CTC * quantity needed * Adjustment Factor).

1) Each Bidder must submit 3 Adjustment Factors to be applied to every task in the CTC. The bid must be either an adjustment "decrease from" (e.g. 0.9800) or "increase to" (e.g. 1.1000) the Unit Prices listed in the CTC.
2) The Bidder's Adjustment Factors must include all of the Bidder's direct and indirect costs. This includes, but is not limited to, its costs for overhead, profit, bond premiums above the reimbursable amount, insurance, mobilization, purchase order proposal development, and all contingencies in connection therewith. See pages 00t-1 – 00-6 of the CTC for a complete explanation of what is and is not included in the Unit Prices.
    a. *The first Adjustment Factor* will be applied to work to be accomplished during Normal Working Hours.
    b. *The second Adjustment Factor* will be applied to work to be accomplished during Other Than Normal Working Hours.
    c. *The third Adjustment Factor* will be for work tasks not identified in the Construction Task Catalog. IQCC includes a provision for establishing of prices for Work requirements which are within the general scope of IQCC but were not included in the CTC at the time of Contract award. These Tasks are referred to as "Non Pre-priced Tasks (NPP)." NPP Tasks may require new specifications and drawings and may subsequently be incorporated into the CTC. The bidders will offer an Adjustment Factor to be applied to the actual material, equipment, and labor cost for NPP work Tasks.

3) Adjustment Factors must be specified to the fourth decimal place. For example:

1	**.**	**1**	**0**	**0**	**0**

Or

0	**.**	**9**	**8**	**0**	**0**

4) For bid evaluation purposes only, the following weighing of the Adjustment factors will be used to determine the Combined Adjustment Factor. Complete the following information within the Sourcewell Procurement Portal:

Adjustment Factors	Weight
NORMAL WORKING HOURS PROJECTS	60%
OTHER THAN NORMAL WORKING HOURS PROJECTS	30%
NON-PRE-PRICED	10%

B. ADMINISTRATIVE FEES. Awarded contractors must pay an administrative fee in exchange for the administration of the contracts by Sourcewell and Sourcewell's contract administrator, Gordian. The bidder must include the administrative fee in calculating the Contractor's Adjustment Factors.

Detailed information about Sourcewell's administrative fee can be found in the Contract, and General Terms and Conditions.

VI. CONTRACT

Bidders awarded a contract will be required to execute the Contract (including its General Terms and Conditions) attached to this IFB.

VII. BIDDING PROCESS

A. PRE-BID CONFERENCE. Sourcewell will hold a non-mandatory pre-bid conference via webcast on the date and time noted in the Solicitation Schedule and on the Sourcewell Procurement Portal. The purpose of this conference is to allow potential bidders to ask questions regarding this IFB. Information about the webcast will be sent to all entities that have registered for this solicitation opportunity through their Sourcewell Procurement Portal Vendor Account. Pre-bid conference attendance is optional but highly encouraged.

B. QUESTIONS REGARDING THIS IFB AND ORAL COMMUNICATION. Any questions regarding this IFB must be submitted through the Sourcewell Procurement Portal. The deadline for submission of questions is found in the Solicitation Schedule and on the Sourcewell Procurement Portal. Answers to questions will be issued through an addendum to this IFB. Repetitive questions will be summarized into a single answer and identifying information will be removed from the submitted questions.

All questions, whether specific to a Bidder or generally related to the IFB, must be submitted using this process. Do not contact individual Sourcewell staff to ask questions or request information as this may disqualify the Bidder from responding to this IFB. Sourcewell will not respond to questions submitted after the deadline.

C. ADDENDA. Sourcewell may modify this IFB; however, no Addenda will be issued later than 5 days prior to the Bid Due Date, except an Addendum that withdraws or postpones this IFB. Addenda issued by Sourcewell become a part of the IFB and will be delivered to potential Bidders through the Sourcewell Procurement Portal. Sourcewell accepts no liability in connection with the delivery of any addenda.

Before a bid will be accepted through the Sourcewell Procurement Portal, all addenda, if any, must be acknowledged by the Bidder by checking the box for each addendum. It is the responsibility of the Bidder to check for any addenda that may have been issued up to the solicitation due date and time.

If an addendum is issued after a Bidder submitted its Bid, the Sourcewell Procurement Portal will WITHDRAW the submission and change the Bidder's Bid status to INCOMPLETE. The Bidder can view this status change in the "MY BIDS" section of the Sourcewell Procurement Portal Vendor Account. The Bidder is solely responsible to check the "MY BIDS" section of the Sourcewell Procurement Portal Vendor Account periodically after submitting its Bid (and up to the Bid due date). If the Bidder's Bid status has changed to INCOMPLETE, the Bidder is solely responsible to:

1) make any required adjustments to its bid,
2) acknowledge the addenda, and
3) ensure the re-submitted bid is received through the Sourcewell Procurement Portal no later than the Bid Due Date and time shown in the Solicitation Schedule above.

D. BID SUBMISSION. Bidder's complete bid must be submitted through the Sourcewell Procurement Portal no later than the date and time specified in the Solicitation Schedule and on the Sourcewell Procurement Portal. Any other form of bid submission, whether electronic, paper, or otherwise, will not be considered by Sourcewell. Late bids will not be considered. It is the Bidder's sole responsibility to ensure that the bid is received on time. To ensure receipt of the latest information and updates via email regarding this solicitation, or if the Bidder has obtained this IFB from a third party, the onus is on the Bidder to create a Sourcewell Procurement Portal Vendor Account and register for this solicitation opportunity.

Within the Procurement Portal, all bids must be digitally acknowledged by an authorized representative of the Bidder attesting that the information contained in in the bid is true and accurate. By submitting a bid, Bidder warrants that the information provided is true, correct, and reliable for purposes of evaluation for potential contract award. The submission of inaccurate, misleading, or false information is grounds for disqualification from a contract award and may subject the Bidder to remedies available by law.

It is recommended that Bidders allow sufficient time to upload the bid and to resolve any issues that may arise. The time and date that a bid is received by Sourcewell is solely determined by the Sourcewell Procurement Portal web clock. In the event of problems with the Sourcewell Procurement Portal, follow the instructions for technical support posted in the portal. It may take up to 24 hours to respond to certain issues.

Upon successful submission of a bid, the Portal will automatically generate a confirmation email to the Bidder. If the Bidder does not receive a confirmation email, contact Sourcewell's support provider at support@bidsandtenders.ca.

E. GENERAL BID REQUIREMENTS. Bids must be:

- In substantial compliance with the requirements of this IFB or it will be considered nonresponsive and be rejected
- Complete–a bid will be rejected if it is conditional or incomplete
- Submitted in English
- Valid and irrevocable for 180 days following the Bid Due Date

Any and all costs incurred in responding to this IFB will be borne by the Bidder.

F. BID MODIFICATION WITHDRAWAL. A submitted bid may not be modified, withdrawn, or cancelled by the Bidder for a period of 180 calendar days following the time and date designated for the receipt of bids. Prior to the deadline for submission of bids, any bid submitted may be modified or withdrawn through the Sourcewell Procurement Portal.

G. OPENING. The Opening of Bids will be conducted electronically through the Sourcewell Procurement Portal. A list of all Bidders will be made publicly available in the Sourcewell Procurement Portal after the Bid Due Date, but no later than the Opening time listed in the Solicitation Schedule.

To view the list of Bidders, verify that the Sourcewell Procurement Portal opportunities list search is set to "All" or "Closed." The solicitation status will automatically change to "Closed" after the Bid Due Date and Time.

VIII. EVALUATION AND AWARD

A. EVALUATION. Only responsive bids will be evaluated. A responsive bid must have been submitted on time and materially satisfy all mandatory requirements identified in this IFB. Deviations or exceptions stipulated in Bidder's response, while possibly necessary in the view of the Bidder, may result in disqualification.

B. AWARD(S). It is the intent of Sourcewell to award each Contract to the lowest, responsive, responsible Bidder(s) based on the Combined Adjustment Factor as calculated by Sourcewell within each Service Region.

A Bidder will not be awarded more than one same scope Contract within any Service Region. In the event a Bidder submits the lowest bid on more than one Solicitation, Sourcewell will determine which Contract will be awarded to which Bidder based on the combination of bids resulting in the lowest overall cost to the Sourcewell Participating Entities.

Sourcewell retains the right to waive any informality in a Bidder's response. Sourcewell reserves the right to reject all bids and advertise again if, in Sourcewell's opinion, the bids received do not meet or exceed the minimum needs and expectations of Sourcewell and its participating entities. Sourcewell reserves the right to award additional Contracts from this solicitation up to 180 calendar days after the close of the IFB.

Competitive Range. If Sourcewell receives a wide margin of bid Adjustment Factors, either too high or too low, then the Sourcewell Bid evaluation committee may establish a Competitive Range for the IFB. If it is determined that a Bidder's Combined Adjustment Factor is too far outside the Competitive Range, then the Bidder can be removed from consideration. The Bidder will be notified that it was determined to be outside the Competitive Range after award of the contracts.

Unbalanced Bid. A Bid may be removed from consideration if it is determined that the Bidder has mathematically unbalanced its Bid to gain a competitive advantage. The Bid will be considered to be unbalanced if any Adjustment Factor is found to not cover the contractor's reasonable actual cost. Those costs would include a reasonable prorated share of its anticipated profit, overhead cost, and other indirect costs that the bidder anticipates for the performance of the work as determined by the Sourcewell Bid Review Committee.

Other Than Normal Working Hours Adjustment Factors. A Bidder's Other Than Normal Working Hours Adjustment Factors must be higher or equal to its Normal Working Hours Adjustment Factors.

IX. ASSIGNMENT OF WORK

See the Contract, and General Terms and Conditions for a detailed description of how work will be assigned.

X. PROTESTS OF AWARDS

Any protest made under this IFB by a Bidder must be in writing, addressed to Sourcewell's Executive Director, and delivered to the Sourcewell office located at 202 12th Street NE, P.O. Box 219, Staples, MN 56479. All documents that comprise the complete protest package must be received no later than 10 calendar days following Sourcewell's notice of contract award(s) or non-award and must be time stamped by Sourcewell no later than 4:30 p.m., Central Time.

A protest must allege a procedural or technical defect, with supporting documentation. A request for re-evaluation of a bid's content will not be entertained.

A protest must include the following items:

- The name, address, and telephone number of the protester
- The original signature of the protester or its representative
- Identification of the solicitation by IFB number
- A precise statement of the relevant facts
- Identification of the alleged breakdown in procedure or technical issues
- Identification of the legal or factual basis
- Any additional supporting documentation
- Protest bond in the amount of $20,000, except where prohibited by law or treaty

Protests that do not address these elements will not be reviewed.

XI. RIGHTS RESERVED

This IFB does not commit Sourcewell to award any contract, and a bid may be rejected if it is nonresponsive, conditional, incomplete, conflicting, or misleading. Bids that contain false statements or do not support an attribute or condition stated by the Bidder may be rejected.

Sourcewell reserves the right to:

- Modify or cancel this IFB at any time
- Reject any and all bids received
- Reject bids that do not comply with the provisions of this IFB
- Independently verify any information provided in a Bid
- Disqualify any Bidder that does not meet the requirements of this IFB, is debarred or suspended by the United States or Canada, State of Minnesota, participating entity's state; has an officer, or other key personnel, who have been charged with a serious crime; or is bankrupt, insolvent, or where bankruptcy or insolvency are a reasonable prospect;
- Waive or modify any informalities, irregularities, or inconsistencies in the bids received
- Clarify any part of a bid

- Award a contract if only one responsive bid is received if it is in the best interest of participating entities
- Award a contract to one or more Bidders if it is in the best interest of participating entities

XII. DISPOSITION OF BIDS

All materials submitted in response to this IFB will become property of Sourcewell and will become public record in accordance with Minnesota Statutes Section 13.591. It is the Bidder's responsibility to clearly identify any data submitted that it considers to be protected. Bidder must also include a justification for the classification citing the applicable Minnesota law.

Sourcewell will not consider the prices submitted by the Bidder to be confidential, proprietary, or trade secret materials. Financial information, including financial statements, provided by a Bidder is not considered trade secret under the statutory definition.

The Bidder understands that Sourcewell will reject bids that are marked confidential nonpublic, either substantially or in their entirety.

[Table of Solicitations and Map of Service Regions to Follow]

Table of Solicitations for
Indefinite Delivery-Indefinite Quantity Construction Contracts in the State of Florida IFB #FL-111821

Solicitation Trade / Solicitation Number	Service Region	Estimated Annual Value
General Construction FL-R1-GC01-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC02-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC03-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC04-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC05-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC06-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC07-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R1-GC08-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC01-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC02-111821	**Region 1 – Northwest Florida**	2 Million
HVAC/Mechanical FL-R1-HVAC03-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E01-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E02-111821	**Region 1 – Northwest Florida**	2 Million
Electrical FL-R1-E03-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-RW01-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-R02-111821	**Region 1 – Northwest Florida**	2 Million
Roofing/Waterproofing FL-R1-R03-111821	**Region 1 – Northwest Florida**	2 Million
Paving/Asphalt/Concrete FL-R1-PAC01-111821	**Region 1 – Northwest Florida**	2 Million

Paving/Asphalt/Concrete FL-R1-PAC02-111821	**Region 1 – Northwest Florida**	2 Million
Paving/Asphalt/Concrete FL-R1-PAC03-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC01-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC02-111821	**Region 1 – Northwest Florida**	2 Million
Civil Construction FL-R1-CC03-111821	**Region 1 – Northwest Florida**	2 Million
General Construction FL-R2-GC01-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC02-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC03-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC04-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC05-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC06-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC07-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL- R2-GC08-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC01-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC02-111821	**Region 2- North Central West Florida**	2 Million
HVAC/Mechanical FL- R2-HVAC03-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E01-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E02-111821	**Region 2- North Central West Florida**	2 Million
Electrical FL- R2-E03-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW01-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW02-111821	**Region 2- North Central West Florida**	2 Million
Roofing/Waterproofing FL- R2-RW03-111821	**Region 2- North Central West Florida**	2 Million
Paving/Asphalt/Concrete FL- R2-PAC01-111821	**Region 2- North Central West Florida**	2 Million
Paving/Asphalt/Concrete FL- R2-PAC02-111821	**Region 2- North Central West Florida**	2 Million

Paving/Asphalt/Concrete FL- R2-PAC03-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC01-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC02-111821	**Region 2- North Central West Florida**	2 Million
Civil Construction FL- R2-CC03-111821	**Region 2- North Central West Florida**	2 Million
General Construction FL-R3-GC01-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC02-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC03-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC04-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC05-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC06-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC07-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R3-GC08-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC01-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC02-111821	**Region 3 – North Central East Florida**	2 Million
HVAC/Mechanical FL-R3-HVAC03-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E01-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E02-111821	**Region 3 – North Central East Florida**	2 Million
Electrical FL-R3-E03-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW01-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW02-111821	**Region 3 – North Central East Florida**	2 Million
Roofing/Waterproofing FL-R3-RW03-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC01-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC02-111821	**Region 3 – North Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R3-PAC03-111821	**Region 3 – North Central East Florida**	2 Million

Civil Construction FL-R3-CC01-111821	**Region 3 – North Central East Florida**	2 Million
Civil Construction FL-R3-CC02-111821	**Region 3 – North Central East Florida**	2 Million
Civil Construction FL-R3-CC03-111821	**Region 3 – North Central East Florida**	2 Million
General Construction FL-R4-GC01-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC02-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC03-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC04-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC05-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC06-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC07-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC08-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC09-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R4-GC010-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC01-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC02-111821	**Region 4 – Northeast Florida**	2 Million
HVAC/Mechanical FL-R4-HVAC03-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E01-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E02-111821	**Region 4 – Northeast Florida**	2 Million
Electrical FL-R4-E03-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW01-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW02-111821	**Region 4 – Northeast Florida**	2 Million
Roofing/Waterproofing FL-R4-RW03-111821	**Region 4 – Northeast Florida**	2 Million
Paving/Asphalt/Concrete FL-R4-PAC01-111821	**Region 4 – Northeast Florida**	2 Million
Paving/Asphalt/Concrete FL-R4-PAC02-111821	**Region 4 – Northeast Florida**	2 Million

Paving/Asphalt/Concrete FL-R4-PAC03-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC01-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC02-111821	**Region 4 – Northeast Florida**	2 Million
Civil Construction FL-R4-CC03-111821	**Region 4 – Northeast Florida**	2 Million
General Construction FL-R5-GC01-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC02-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC03-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC04-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC05-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC06-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC07-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R5-GC08-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC01-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC02-111821	**Region 5 – Central West Florida**	2 Million
HVAC/Mechanical FL-R5-HVAC03-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E01-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E02-111821	**Region 5 – Central West Florida**	2 Million
Electrical FL-R5-E03-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW01-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW02-111821	**Region 5 – Central West Florida**	2 Million
Roofing/Waterproofing FL-R5-RW03-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC01-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC02-111821	**Region 5 – Central West Florida**	2 Million
Paving/Asphalt/Concrete FL-R5-PAC03-111821	**Region 5 – Central West Florida**	2 Million

Civil Construction FL-R5-CC01-111821	**Region 5 – Central West Florida**	2 Million
Civil Construction FL-R5-CC02-111821	**Region 5 – Central West Florida**	2 Million
Civil Construction FL-R5-CC03-111821	**Region 5 – Central West Florida**	2 Million
General Construction FL-R6-GC01-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC02-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC03-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC04-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC05-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC06-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC07-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R6-GC08-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC01-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC02-111821	**Region 6 – Central Florida**	2 Million
HVAC/Mechanical FL-R6-HVAC03-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E01-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E02-111821	**Region 6 – Central Florida**	2 Million
Electrical FL-R6-E03-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW01-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW02-111821	**Region 6 – Central Florida**	2 Million
Roofing/Waterproofing FL-R6-RW03-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC01-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC02-111821	**Region 6 – Central Florida**	2 Million
Paving/Asphalt/Concrete FL-R6-PAC03-111821	**Region 6 – Central Florida**	2 Million
Civil Construction FL-R6-CC01-111821	**Region 6 – Central Florida**	2 Million

Civil Construction FL-R6-CC02-111821	**Region 6 – Central Florida**	2 Million
Civil Construction FL-R6-CC03-111821	**Region 6 – Central Florida**	2 Million
General Construction FL-R7-GC01-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC02-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC03-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC04-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC05-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC06-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC07-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R7-GC08-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC01-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC02-111821	**Region 7 – Central East Florida**	2 Million
HVAC/Mechanical FL-R7-HVAC03-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E01-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E02-111821	**Region 7 – Central East Florida**	2 Million
Electrical FL-R7-E03-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW01-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW02-111821	**Region 7 – Central East Florida**	2 Million
Roofing/Waterproofing FL-R7-RW03-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC01-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC02-111821	**Region 7 – Central East Florida**	2 Million
Paving/Asphalt/Concrete FL-R7-PAC03-111821	**Region 7 – Central East Florida**	2 Million
Civil Construction FL-R7-CC01-111821	**Region 7 – Central East Florida**	2 Million
Civil Construction FL-R7-CC02-111821	**Region 7 – Central East Florida**	2 Million

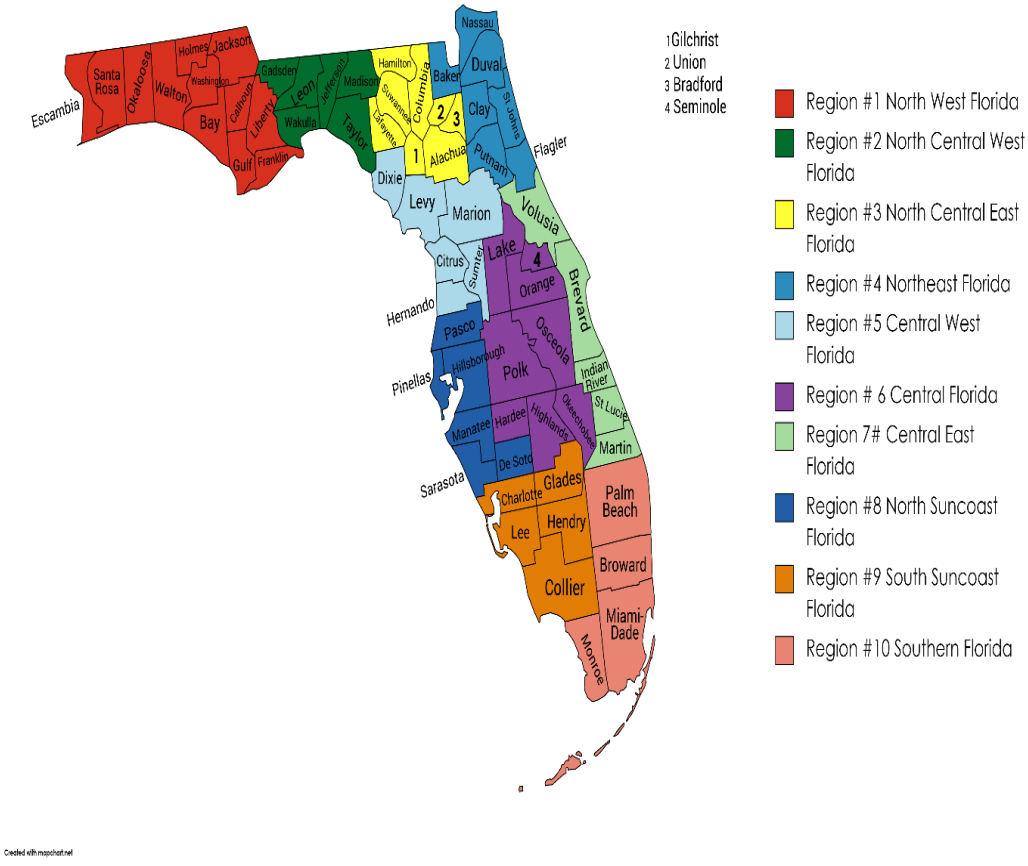
Civil Construction FL-R7-CC03-111821	**Region 7 – Central East Florida**	2 Million
General Construction FL-R8-GC01-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC02-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC03-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC04-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC05-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC06-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC07-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC08-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC09-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R8-GC10-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC01-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC02-111821	**Region 8 – North Suncoast Florida**	2 Million
HVAC/Mechanical FL-R8-HVAC03-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E01-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E02-111821	**Region 8 – North Suncoast Florida**	2 Million
Electrical FL-R8-E03-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW01-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW02-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW03-111821	**Region 8 – North Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R8-RW04-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC01-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC02-111821	**Region 8 – North Suncoast Florida**	2 Million
Paving/Asphalt/Concrete FL-R8-PAC03-111821	**Region 8 – North Suncoast Florida**	2 Million

Paving/Asphalt/Concrete FL-R8-PAC04-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC01-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC02-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC03-111821	**Region 8 – North Suncoast Florida**	2 Million
Civil Construction FL-R8-CC04-111821	**Region 8 – North Suncoast Florida**	2 Million
General Construction FL-R9-GC01-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC02-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC03-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC04-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC05-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC06-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC07-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R9-GC08-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC01-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC02-111821	**Region 9 – South Suncoast Florida**	2 Million
HVAC/Mechanical FL-R9-HVAC03-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E01-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E02-111821	**Region 9 – South Suncoast Florida**	2 Million
Electrical FL-R9-E03-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW01-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW02-111821	**Region 9 – South Suncoast Florida**	2 Million
Roofing/Waterproofing FL-R9-RW03-111821	**Region 9 – South Suncoast Florida**	2 Million
Paving/Concrete/Asphalt FL-R9-PAC01-111821	**Region 9 – South Suncoast Florida**	2 Million
Paving/Concrete/Asphalt FL-R9-PAC02-111821	**Region 9 – South Suncoast Florida**	2 Million

Paving/Concrete/Asphalt FL-R9-PAC03-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC01-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC02-111821	**Region 9 – South Suncoast Florida**	2 Million
Civil Construction FL-R9-CC03-111821	**Region 9 – South Suncoast Florida**	2 Million
General Construction FL-R10-GC01-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC02-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC03-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC04-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC05-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC06-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC07-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC08-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC09-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC10-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC11-111821	**Region 10 – Southern Florida**	2 Million
General Construction FL-R10-GC12-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC01-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC02-111821	**Region 10 – Southern Florida**	2 Million
HVAC/Mechanical FL-R10-HVAC03-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E01-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E02-111821	**Region 10 – Southern Florida**	2 Million
Electrical FL-R10-E03-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW01-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW02-111821	**Region 10 – Southern Florida**	2 Million

Roofing/Waterproofing FL-R10-RW03-111821	**Region 10 – Southern Florida**	2 Million
Roofing/Waterproofing FL-R10-RW04-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC01-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC02-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC03-111821	**Region 10 – Southern Florida**	2 Million
Paving/Asphalt/Concrete FL-R10-PAC04-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC01-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC02-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC03-111821	**Region 10 – Southern Florida**	2 Million
Civil Construction FL-R10-CC04-111821	**Region 10 – Southern Florida**	2 Million

MAP OF
SOURCEWELL CONTRACT
SERVICE REGIONS
Indefinite Delivery-Indefinite Quantity
Construction Contracts
in the
State of Florida
IFB #FL-111821



Region 1 Northwest Florida

Escambia	Santa Rosa	Okaloosa	Walton
Holmes	Jackson	Washington	Bay
Calhoun	Liberty	Gulf	Franklin

Region 2 North Central West Florida

Gadsden	Leon	Wakulla	Jefferson
Madison	Taylor		

Region 3 North Central East Florida

Hamilton	Suwannee	Lafayette	Columbia
Gilchrist	Union	Bradford	Alachua

Region 4 Northeast Florida

Nassau	Baker	Duval	Clay
St Johns	Putnam	Flagler	

Region 5 Central West Florida

Dixie	Levy	Marion	Citrus
Cumter	Hernando		

Region 6 Central Florida

Lake	Seminole	Orange	Osceola
Polk	Hardee	Highlands	Okeedhobee

Region 7 Central East Florida

Volusia	Brevard	Indian River	St Lucie
Martin			

Region 8 North Suncoast Florida

Pasco	Hillsborough	Pinellas	Manatee
Sarasota	De Soto		

Region 9 South Suncoast Florida

Charlotte	Glades	Lee	Hendry
Collier			

Region 10 Southern Florida

Palm Beach	Broward	Miami Dade	Monroe

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SOURCEWELL
PROFESSIONAL SERVICES AGREEMENT

THIS PROFESSIONAL SERVICES AGREEMENT is by and between **Sourcewell**, 202 12th Street Northeast, PO Box 219, Staples, MN 56479 and **The Gordian Group, Inc.**, 30 Patewood Drive, Suite 350, Greenville, SC 29615 (Gordian).

Sourcewell is in need of a vendor to perform services related to the ongoing management of its indefinite delivery/indefinite quantity construction contracting program for the benefit of Sourcewell participating entities (Services). Gordian is qualified and willing to perform the services described in this Agreement.

ARTICLE 1: TERM

A. **Term**. This Agreement will be effective September 16, 2020, and will remain in effect through October 1, 2025, unless earlier terminated pursuant to the terms of this Agreement. The Agreement may be extended by mutual agreement of the parties.

B. **Survival**. Notwithstanding any expiration or termination of this Agreement, all payment obligations incurred prior to expiration or termination will survive, as will the following: Articles 8 and 9. All other rights will cease upon expiration or termination of this Agreement.

ARTICLE 2: GORDIAN'S DUTIES

Gordian will have the following duties and responsibilities in performing the services for Sourcewell (Services):

A. **Program Support**: Gordian will be responsible for the on-going support of the Sourcewell indefinite delivery/indefinite quantity construction contracting program (currently referred to as the Sourcewell ezIQC program).

B. **EZIQC Contract Administration**: Gordian will be responsible for assisting Sourcewell in the procurement of the contracts of Sourcewell-awarded EZIQC Contractors including:

1. Unit Price Book(s): For each Sourcewell EZIQC contract solicitation Gordian will prepare one or more customized Unit Price Books (also known as a Construction Task Catalog®) containing prices covering material, equipment and labor costs for various units of construction, and adjusting these costs to current market conditions and targeted geographies for the advertising and award of Sourcewell's EZIQC Contracts. Sourcewell and Gordian will mutually agree on the number of Unit Price Books included in each EZIQC Contract solicitation, and the number of geographic regions associated with each

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solicitation. All unit price books will be provided in electronic, read-only format and may only be distributed in the same format.

2. Technical Specifications: Gordian will prepare and publish Technical Specifications describing the materials, performance and installation requirements for each of the construction tasks listed in the Unit Price Book. All Technical Specifications will be provided in electronic, read-only format and may only be distributed in the same format.

3. Contractual Terms and Conditions and Bid Forms: Gordian will provide technical assistance to Sourcewell staff, as requested, in the preparation of contractual terms and conditions, and bid forms, which incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Gordian will have final approval of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Participating Entities; payment terms; and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

4. Vendor Outreach and Development Support: Gordian will be responsible to develop a prospective vendor outreach list and make vendor outreach contacts via phone, email, virtual on-line, and in-person visits to potential Sourcewell solicitation respondents. Vendor development efforts will include distribution of Sourcewell marketing collateral developed and approved by Sourcewell. All vendor outreach efforts will be concluded, and all contact between Gordian and prospective vendors will be concluded on or before each solicitation's "Quiet Period" established by the Sourcewell Procurement Department. Sourcewell Procurement will provide reasonable advanced notice of the for the "Quiet Period" for each EZIQC Contract Solicitation, with the goal of providing notice no later than 10 days from the initiation of such Quiet Period. From the commencement of the Quiet Period until the announcement of contract awards by the Sourcewell Evaluation Committee, Gordian will cease communication with prospective respondents related to the solicitation and will immediately refer all inquiries to the Sourcewell Procurement Portal as the exclusive platform for submission of questions or communications related to the solicitation.

5. Procurement Support: Gordian will be responsible for providing Sourcewell with procurement support during the procurement of EZIQC Contracts, including advising Sourcewell on the appropriate method, duration, and publications for advertising each EZIQC Contract solicitation in the applicable jurisdictions. At the request of Sourcewell Procurement, and in light of COVID-19 pandemic restrictions implemented by various jurisdictions, Gordian will provide a recorded video presentation to be shared by Sourcewell during pre-bid meetings with interested bidders relating to the calculation of adjustment factors, the interpretation of the Unit Price Book, and other subject matter as deemed necessary by the parties. Gordian will make other presentations with and on behalf of Sourcewell relating to the EZIQC Program and solicitation process, including contractor

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training sessions, as deemed necessary by the parties. Sourcewell Procurement will determine if and when pre-recorded video presentations will be implemented, modified, or terminated.

6. Evaluation and Award: Sourcewell's Evaluation Committee will be responsible for all EZIQC Contract award determinations. Upon request, Gordian will provide technical assistance to the Sourcewell evaluation committee. Any Gordian participation in the Evaluation Committee will require compliance with Sourcewell's procurement protocols, in particular to those related to the handling and classification of government data and government procurement standards.

7. Standard Work: Gordian will work with Sourcewell in a mutually approved standard process for the execution of the EZIQC Contract solicitation process, such standard process will include, but not be limited to, the following tasks:

i. Initiation of a request for the solicitation of new EZIQC Contracts by either party;

ii. Comment on, and technical assistance with, the draft bid documents for Sourcewell solicitations, as requested by Sourcewell in timely manner;

iii. Development and delivery of pre-recorded video content and supporting materials necessary for pre-bid seminars to be conducted by Sourcewell, or in-person attendance at pre-bid conferences at the request of Sourcewell; and

iv. Technical assistance to the Sourcewell evaluation committee responsible for review, evaluation and award of EZIQC Contracts, as requested by Sourcewell.

C. **Information Management System**: Gordian will be responsible for providing the web-based JOC Information Management System (IMS) for an unlimited number of EZIQC Contractors for the purpose of executing work procured through the EZIQC Program. The JOC IMS must be capable of providing full project tracking, developing cost proposals, generating project documentation, providing project scheduling, tracking diverse supplier participation (W/MBE, SBE, and Veteran-Owned businesses), and generating standard program reports as requested by Sourcewell. Gordian will not be responsible for providing access to, or training on, the JOC IMS to Sourcewell or any Participating Entity in connection with the EZIQC Program.

D. **Onboarding and Training Programs**: Gordian will be responsible for developing and conducting all onboarding and training programs for the EZIQC Contractors to ensure that the EZIQC Program functions properly. Training and onboarding will be provided to newly-awarded Sourcewell EZIQC contractors within a reasonable time after contract award, with the goal of 30 days from the contract award date. Training will include sessions on the use of the JOC IMS, the Job Order development process, and the application and interpretation of the Construction Task Catalog. Onboarding sessions will include sales and marketing training, and associated marketing collateral as agreed upon by the parties. At the discretion of Gordian, such training and onboarding programs

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may be conducted onsite or via remote, web-based training sessions and will be conducted at Gordian's sole expense, excluding any expenses associated with Sourcewell's attendance of any training and onboarding sessions.

E. **Marketing Support**: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all associated marketing efforts relating to the EZIQC program. Gordian's designated marketing representative will be a member of the marketing department with primary responsibility for the marketing of the EZIQC Program. In addition, Gordian will:

1. Work with Sourcewell and exercise reasonable efforts to:

   i. Work with Sourcewell's designated representative to develop a joint marketing plan as agreed upon by both parties. The joint marketing plan may be amended, revised and updated as needed during the term of this Agreement with approval by both parties.

   ii. Will carry out Gordian's responsibilities under the joint marketing plan, as updated and amended by both parties, during the term of this Agreement;

   iii. Provide any marketing materials developed under the joint marketing plan to Sourcewell's designated marketing representative not less than 48 hours prior to publication. Sourcewell's failure to provide any objection to such marketing materials within 48 hours of receipt will be deemed an approval of such marketing materials;

   iv. Schedule and attend, not less than monthly, recurring calls with Sourcewell's designated marketing representative for continued coordination and collaboration on all marketing activities associated with the EZIQC Program including the Joint Marketing Plan; and,

   v. Provide a list of scheduled conferences and speaking engagements, updated monthly, which Gordian plans to attend and which relate to the promotion and marketing of the EZIQC Program.

2. Be responsible for all costs associated with marketing efforts initiated, assigned to, or otherwise carried out by Gordian unless otherwise set forth in this Agreement or the joint marketing plan.

F. **Job Order Initiation and Development**: Gordian will be responsible for providing the following Job Order Development services:

1. Project Identification and Initiation: Gordian will develop and maintain a web portal to enable Participating Entity to identify and request assistance with possible projects to be procured through the EZIQC Program. Gordian will respond to any Participating Entity

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requests for assistance within 48 hours of receipt of such request. Gordian will have the discretion to deny the requested assistance for any reason.

2. Contractor Identification: In the event the Participating Entity requests a Joint Scope Meeting to discuss the potential project, Gordian will provide the Participating Entity with a list of available EZIQC Contractors for the project based on factors which include, but are not limited to, the type of work involved, and the location of the project. The Participating Entity will be responsible for approving the selected EZIQC Contractor for the project.

3. Joint Scope Meeting: Gordian's project manager will schedule a Joint Scope Meeting at the project site to help the Participating Entity and the EZIQC Contractor agree on the details of the work that the EZIQC Contractor will perform. The purpose of the scoping process is to allow the EZIQC Contractor an opportunity to inspect the site and ask questions before submitting a Price Proposal.

4. Develop Detailed Scope of Work: Gordian will assist the Participating Entity and EZIQC Contractor with preparing a Detailed Scope of Work that describes the work the EZIQC Contractor will perform. Gordian will also assist with resolving issues when project plans and actual conditions vary.

5. Request for Price Proposal: After all parties are in agreement that the Detailed Scope of Work properly reflects the work to be performed, Gordian's project manager will send the Detailed Scope of Work and a Request for Proposal to the EZIQC Contractor.

6. Price Proposal Review: Gordian's project manager will review the Price Proposal to make sure the EZIQC Contractor has selected the appropriate tasks and quantities and will request the EZIQC Contractor to make any required changes to ensure the Price Proposal reflects the appropriate means and methods for accomplishing the Detailed Scope of Work. Gordian will also obtain and review any Participating Entity required information submitted by the EZIQC Contractor such as a construction schedule and list of proposed subcontractors. Gordian's project manager will submit the Price Proposal and related documents to Participating Entity.

7. Issue Job Order: Once the Participating Entity approves the Price Proposal and related documents, and decides to move forward with the project, Gordian will assist the Participating Entity with the issuance of a job order (which may be in the form of a purchase order, notice-to-proceed, or similar purchasing document) to the selected EZIQC Contractor to initiate the completion of the project.

8. Construction Process and Supplemental Job Orders: During construction, unless project management services are requested by the Participating Entity as set forth below, the Participating Entity's, project managers, or its designees, will be responsible for all construction management activities. In the event unforeseen conditions arise or Participating Entity desires to change the Detailed Scope of Work, Gordian will assist the

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Participating Entity with the development of a supplemental Job Order in the same manner as the original Job Order.

G. **On-Going Program Administration and Support**: Gordian will be responsible for providing program administration to Sourcewell during the term of the Agreement. On-going program administration will include providing updated contract documents, unit price books, assisting with the procurement of additional EZIQC Contractors utilizing the process outlined above, providing EZIQC Contractors with access to all applicable updates and revisions to the JOC IMS, and providing training for onboarding and training for all EZIQC Contractors. Gordian will provide telephone and web-based customer support to Participating Entities and EZIQC Contractors during the period of 8:30 a.m. EST to 10:00 p.m. EST, Monday thru Friday, excluding holidays.

H. **Accounting, Collections and Remittance of Administrative Fees**: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all associated invoicing and collection efforts relating to the EZIQC program. Gordian's designated accounting representative will be a member of the accounting department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Gordian will:

1. Invoice and collect all applicable fees from the EZIQC Contractors in accordance with the terms of Article VIII and will remit, via electronic payment, the Sourcewell Administrative Fee (as defined in Article VIII) on a monthly basis for all Sourcewell Administrative Fees collected during the preceding month.

   i. The parties agree that as a condition precedent to Gordian's obligation to remit the Sourcewell Administrative Fee, Gordian must first receive payment in full for the Gordian Administrative Fee (as defined in Article VIII). In the event Gordian does not receive payment of the Gordian Administrative Fee in full, for any reason, Gordian will not be liable to Sourcewell for payment of the Sourcewell Administrative Fee.

2. Provide Sourcewell with a monthly report detailing all Sourcewell Administrative Fees collected during the previous month including Sourcewell contract number, project names, project values, and the fees collected. The monthly report will be in the sales reporting template format developed and provided by Sourcewell.

3. Provide Sourcewell with a monthly report detailing all outstanding accounts receivable by EZIQC Contractor including the amount, date of accrual, and days outstanding for each invoice.

4. Gordian may initiate and control any litigation seeking any unpaid balances owed by any EZIQC Contractor, provided such unpaid balance exceeds $50,000.

I. **Vendor Performance Management Services**: Gordian will provide EZIQC Contractor performance management throughout the term of each Sourcewell awarded contract. The parties will mutually agree on a standard EZIQC Contractor performance assessment form for

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completion and delivery to Sourcewell, to be provided upon request from Sourcewell, not less than 30 days in advance of each EZIQC Contractor's annual contract anniversary date.

ARTICLE 3: SOURCEWELL DUTIES AND RESPONSIBILITIES

Sourcewell will perform the following duties and responsibilities to complete the Services:

A. **EZIQC Contract Procurement**:

1. Advertisement and Bid Documents: Sourcewell will be responsible for advertising, posting, and distributing the bid documents, contract documents, unit price books and all associated documentation related to the advertisement and award of the EZIQC Contracts. Sourcewell will be responsible for conducting all activities, and paying any expenses required, to ensure the appropriate advertisement of the EZIQC Contract solicitations in each applicable jurisdiction.

2. Pre-bid Seminars: Sourcewell will be responsible for scheduling and hosting any pre-bid seminars conducted as part of the solicitation of any EZIQC Contracts, and will be responsible for any expenses associated therewith, excluding any expenses associated with preparation of Gordian's recorded video presentation to be shared during such pre-bid seminars. At Sourcewell's sole discretion, pre-bid seminars may be conducted in-person, or remotely via video-enabled webinars. Sourcewell Procurement reserves the right to invite a Gordian representative, at Gordian's sole expense, to attend the pre-bid conference either in-person or via the video-enabled webinar.

3. Contractual Terms and Conditions and Bid Forms: Sourcewell will prepare contractual terms and conditions, and bid forms, that incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Gordian will have final approval of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Participating Entities, payment terms, and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

4. Evaluation and Award: Sourcewell will designate the committee responsible for evaluating and awarding the EZIQC Contracts.

5. Standard Work: Sourcewell will exercise reasonable efforts in a mutually approved standard process for the execution of the EZIQC Contract solicitation process, such standard process will include, but not be limited to, the following tasks:

i. Initiation of a request for the solicitation of new EZIQC Contracts by either party, with Sourcewell retaining the final determination on issuance of the solicitation and the

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geographic scope of the solicitation (whenever possible, Sourcewell intends to solicit for EZIQC Contracts across an entire state);

ii. Execution of the advertisement, evaluation and award of EZIQC Contracts in accordance with applicable competitive bidding requirements in the jurisdiction where the EZIQC Contract solicitation is to occur;

iii. Creation and placement of advertisements in connection with the EZIQC Contract solicitation process;

iv. Review, revision, and finalization of the bid documents in timely manner;

v. Scheduling and execution of any pre-bid seminars and development of materials associated with the pre-bid seminars;

vi. Creation and identification of evaluation committee responsible for review, evaluation, and award of EZIQC Contracts; and,

vii. Consult with Gordian on the above-listed tasks at it determines in its discretion.

B. **Marketing Support**: Sourcewell will be responsible for providing Gordian with a designated representative to coordinate all associated marketing efforts relating to the EZIQC program. Sourcewell's designated marketing representative will be a member of the marketing department with primary responsibility for the marketing of the EZIQC Program. In addition, Sourcewell will:

1. Work with Gordian and exercise reasonable efforts to:

i. Carry out Sourcewell's responsibilities under the Joint Marketing Plan, as updated and amended by both parties, during the term of this Agreement;

ii. Provide any marketing materials developed under the Joint Marketing Plan to Gordian's designated marketing representative not less than 48 hours prior to publication. Gordian's failure to provide any objection to such marketing materials within 48 hours of receipt will be deemed an approval of such marketing materials;

iii. Schedule and attend, not less than monthly, recurring calls with Gordian's designated marketing representative for continued coordination and collaboration on all marketing activities associated with the EZIQC Program including the Joint Marketing Plan;

iv. Provide a list of scheduled conferences and speaking engagements, updated monthly, which Sourcewell plans to attend and which relate to the promotion and marketing of the EZIQC Program; and,

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v. Provide a list of all Sourcewell Participating Entities, updated quarterly, to Gordian's designated marketing representative.

2. Be responsible for all costs associated with marketing efforts initiated, assigned to, or otherwise carried out by Sourcewell unless otherwise set forth in this Agreement or the Joint Marketing Plan.

C. **Accounting and Collections**: Sourcewell will be responsible for providing Gordian with a designated representative to coordinate all associated invoicing and collection efforts relating to the EZIQC program. Sourcewell's designated accounting representative will be a member of the finance department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Sourcewell will:

1. Withhold any contract award or contract renewal from any EZIQC Contractor with an outstanding balance owed to Gordian of greater than $10,000.00 provided that Gordian has delivered monthly reports on outstanding accounts receivables as set forth in Article 2(H)(3).

2. Provide notice to Gordian of Sourcewell's intent to renew any EZIQC contract, or make any contract award, to any EZIQC Contractor with any outstanding accounts receivable that is over 90 days old, provided that Gordian has delivered monthly reports on outstanding accounts receivables as set forth in Article 2(H)(3).

3. Provide reasonable assistance and cooperation to Gordian in the collection of any outstanding balance owed by any EZIQC Contractor including, but not limited to, sending notices of default, notice of termination, or any other remedial action allowed by the EZIQC Contract or permitted by law.

4. Upon the approval of Sourcewell's General Counsel in the General Counsel's sole discretion, Join and bear the proportionate cost of any litigation initiated by Gordian to collect any unpaid balances owed by any EZIQC Contractor provided such unpaid balances exceed $50,000.00 in total for all EZIQC Contracts held by the EZIQC Contractor. Sourcewell's obligation to bear any cost of such litigation is contingent upon Gordian's full and timely performance of the vendor assessment and performance evaluation tasks described above with respect to the vendor.

ARTICLE 4: JOC SYSTEM LICENSE

Gordian hereby grants to Sourcewell, and Sourcewell hereby accepts from Gordian for the term of this Agreement, a non-exclusive right, privilege and license to Gordian's Job Order Contracting (JOC) System and other related proprietary materials to be used for the sole purpose of implementing and executing the EZIQC Program. Proprietary Information will include, but is not limited to Gordian's JOC Information Management System (as defined below), and support documentation, Construction Task Catalog (also commonly referred to as a Unit Price Book), construction cost data, training materials and other proprietary materials provided by Gordian. In the event this

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Agreement expires or terminates as provided herein, this JOC System License will terminate and Sourcewell will return to Gordian all Proprietary Information in its possession.

Sourcewell agrees to respect the copyrights, registrations, trade secrets and other proprietary rights of Gordian in the Proprietary Information during and after the term of this Agreement and will not reproduce, distribute or otherwise use the Proprietary Information for any purpose except as provided for herein, subject to federal and state laws related to public records disclosure.

Gordian believes that the unauthorized disclosure of Proprietary Information will result in irreparable harm to Gordian for which monetary damages would be an inadequate remedy and that no such disclosure will be made to anyone without first providing notice to Gordian. The parties acknowledge that as a local agency of the State of Minnesota, Sourcewell is required to comply with the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13) which classifies and controls government data. Gordian considers its Proprietary Information to meet the statutory definition of Trade Secret and would therefore be protected from release. Sourcewell will provide prompt notice to Gordian in the event of receipt of a request for release of Gordian's Proprietary Information, but will have no obligation to seek an administrative or judicial order declaring the data non-public or trade secret under Chapter 13.

Gordian agrees to grant a license to each EZIQC Contractor that is awarded an EZIQC Contract by Sourcewell in connection with the EZIQC Program, provided the EZIQC Contractor remits all required payments to Gordian in a timely manner, and provided Sourcewell includes licensing language in the EZIQC contract similar in form to this JOC System License. In the event any contractor participating in the EZIQC Program fails to remit any payment to Gordian in a timely manner, Gordian will have the discretion to terminate the contractor's access to the Proprietary Information until such time as all outstanding payments are made.

In the event of a conflict in terms and conditions between this JOC System License and any other terms and conditions of this Agreement or any purchase order or similar purchasing document issued by Sourcewell, this JOC System License will take precedence.

ARTICLE 5: CONSIDERATION AND PAYMENT

In consideration of the Services provided, and the JOC System License granted above, Gordian will be paid the following fee:

A. **Gordian Administrative Fee**: Gordian will collect the percentage listed below of the value of each Job Order procured by a Participating Entity from an EZIQC Contractor. All reimbursable expenses related to the administration of the EZIQC Program will be considered included in the Gordian Administrative Fee set forth above, except as otherwise provided for herein.

- For all purchase orders issued from September 15, 2020, to March 31, 2021, Gordian's fee will be: 6.25%.
- For all purchase orders issued on or after April 1, 2021, Gordian's fee will be 6%.

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B. **Sourcewell Administrative Fee**: In addition to the Gordian Administrative Fee, Sourcewell will be entitled to a Sourcewell Administrative Fee calculated as a percentage of the value of each Job Order procured by a Participating Entity from an EZIQC Contractor.

- For all purchase orders issued from September 15, 2020, to March 31, 2021, Sourcewell's fee will be: 1.25%.
- For all purchase orders issued on or after April 1, 2021, Sourcewell's fee will be 1.5%.

C. **State of Georgia:** For purchase orders issued under EZIQC contracts adopted by the State of Georgia, fees will be calculated as follows: 5.75% to Gordian, 0.75% to Sourcewell, and 1% to the State of Georgia.

D. **E&I Cooperative Services:** For purchase orders issued under EZIQC contracts adopted by E&I Cooperative Services, fees will be calculated as follows: 5.5% to Gordian, 1% to Sourcewell, and 1% to E&I Cooperative Services.

Sourcewell will include language in the EZIQC Contracts that: 1) instructs the EZIQC Contractors to include a total administrative fee of 7.5% in their adjustment factors to cover the full Administrative Fee; and 2) requires the EZIQC Contractors to remit the Sourcewell Administrative Fee to Gordian within five days of receiving payment from the Participating Entity for each Job Order performed by the EZIQC Contractor. Gordian will retain the Gordian Administrative Fee described above and remit all remaining collected Sourcewell Administrative Fees to Sourcewell.

ARTICLE 6: AUTHORIZED REPRESENTATIVE

A. Sourcewell's Authorized Representative is Tony Glenz, Supplier Development Supervisor, Office: 218-894-5491, Mobile: 218-371-1671, or his successor, and has the responsibility to monitor Gordian's performance and the authority to accept the services provided under this Agreement.

B. Gordian's Authorized Representative is Louis Patin, Vice President, National Programs, 30 Patewood Drive, Suite 350, Greenville, SC 29615, Office: 800-874-2291 Mobile: 818-518-0678, or his successor.

ARTICLE 7: INSURANCE

A. **Insurance Requirements:** At its own expense, Gordian must maintain insurance policy(ies) in effect at all times during the performance of this Contract with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:

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1. Workers' Compensation and Employer's Liability: Workers' Compensation: As required by any applicable law or regulation. Employer's Liability Insurance: must be provided in amounts not less than listed below:

Minimum limits:
$500,000 each accident for bodily injury by accident
$500,000 policy limit for bodily injury by disease
$500,000 each employee for bodily injury by disease

2. Commercial General Liability Insurance: Gordian will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office (ISO) Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Contract.

Minimum Limits:
$1,000,000 each occurrence Bodily Injury and Property Damage
$1,000,000 Personal and Advertising Injury
$2,000,000 aggregate for Products-Completed operations
$2,000,000 general aggregate

3. Commercial Automobile Liability Insurance: During the term of this Contract, Gordian will maintain insurance covering all owned, hired, and non-owned automobiles in limits of liability not less than indicated below. The coverage must be subject to terms no less broad than ISO Business Auto Coverage Form CA 0001 (2010 edition or newer), or equivalent.

Minimum Limits:
$1,000,000 each accident, combined single limit

4. Umbrella Insurance: During the term of this Contract, Gordian will maintain umbrella coverage over Workers' Compensation, Commercial General Liability, and Commercial Automobile.

Minimum Limits:
$10,000,000

5. Professional/Technical, Errors and Omissions, and/or Miscellaneous Professional Liability: During the term of this Contract, Gordian will maintain coverage for all claims Gordian may become legally obligated to pay resulting from any actual or alleged

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negligent act, error, or omission related to Gordian's professional services required under this Contract.

Minimum Limits:
$3,000,000 per claim or event
$3,000,000 annual aggregate

6. Network Security and Privacy Liability Insurance: During the term of this Contract, Gordian will maintain coverage for network security and privacy liability. The coverage may be endorsed on another form of liability coverage or written on a standalone policy. The insurance must cover claims which may arise from failure of Gordian's security resulting in, but not limited to, computer attacks, unauthorized access, disclosure of not public data – including but not limited to, confidential or private information, transmission of a computer virus, or denial of service.

Minimum limits:
$2,000,000 per occurrence
$2,000,000 annual aggregate

Failure of Gordian to maintain the required insurance will constitute a material breach entitling Sourcewell to immediately terminate this Contract for default.

B. **Certificates of Insurance**: Prior to commencing under this Contract, Gordian must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Contract. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or sent to the Sourcewell Contract Administrator assigned to this Contract. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf. All policies must include there will be no cancellation, suspension, non-renewal, or reduction of coverage without 30 days' prior written notice to the Gordian.

Upon request, Gordian must provide to Sourcewell copies of applicable policies and endorsements, within 10 days of a request. Failure to request certificates of insurance by Sourcewell, or failure of Gordian to provide certificates of insurance, in no way limits or relieves Gordian of its duties and responsibilities in this Contract.

C. **Additional Insured Endorsement and Primary and Non-Contributory Insurance Clause**: Gordian agrees Sourcewell and its Participating Entities, including their officers, agents, and employees, shall be covered as an additional insured under Gordian's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Gordian, and products and completed operations of Gordian. The policy provision(s) or endorsement(s) must further provide that coverage is primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds.

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D. **Waiver of Subrogation**. Gordian waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Contract or other insurance applicable to the Gordian or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Gordian or its subcontractors. Where permitted by law, Gordian must require similar written express waivers of subrogation and insurance clauses from each of its subcontractors.

E. **Umbrella/Excess Liability**: The limits required by this Contract can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies).

F. **Self-Insured Retentions**: Any self-insured retention in excess of $10,000 is subject to Sourcewell's approval.

ARTICLE 8: DATA AND INTELLECTUAL PROPERTY

A. **Government Data**: The Parties acknowledge that each is subject to the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13) as to data created and maintained under this Agreement.

B. **Trademark License**: Gordian grants to Sourcewell, during the term of this Agreement, a nontransferable, non-assignable, non-divisible, non-exclusive license, to use the trademarks, service marks and trade names set forth below, or as otherwise agreed to by the Parties in writing, solely in connection with this Agreement, and solely for the purpose of marketing, selling, advertising or otherwise promoting the Sourcewell EZIQC Program.

1. Gordian
2. EZIQC
3. Sightlines
4. RSMeans
5. Construction Task Catalog
6. eGordian
7. JOC Cloud

Any use of the trademarks set forth above shall at all times comply with any brand guidelines published by Gordian and provided to Sourcewell during the term of this Agreement. Any deviation from the brand guidelines shall require written approval from Gordian. Gordian may add, remove, or otherwise revise the list of trademarks by providing written notice to Sourcewell of such changes no less than 10 days prior to the date of such changes becoming effective.

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C. **Sourcewell Grant of License**: Sourcewell grants to Gordian a royalty-free, worldwide, non-exclusive right and license to use the its trademark in advertising and promotional materials for the purpose of marketing Sourcewell's relationship with Gordian. Gordian must not alter Sourcewell's Trademarks from the form provided by Sourcewell and must comply with Sourcewell's removal requests as to specific uses of its trademarks or logos. Upon the termination of this Contract for any reason, Gordian will have 30 days to remove all trademarks from signage, websites, and the like bearing Sourcewell's name or logo.

ARTICLE 9: GENERAL TERMS

A. **Governing Law, Jurisdiction and Attorney's Fees**: This Agreement will be interpreted and construed in accordance with the laws of the State of Minnesota. Any dispute arising out of this Agreement will be adjudicated in Todd County, Minnesota. In any action or proceeding to enforce rights under this Agreement, the prevailing party will be entitled to recover costs and reasonable attorney's fees from the other party.

B. **Assignment**: Neither party may assign or otherwise transfer its rights and obligations under this Agreement without prior written consent of the other party, not to be unreasonably withheld. Any prohibited assignment will be invalid.

C. **Independent Contractor**: Gordian is an independent contractor, and neither Gordian nor its employees or subcontractors will, under any circumstances, be considered employees, servants or agents of Sourcewell. Sourcewell will not be legally responsible for any negligence or other wrongdoing or intentional act by Gordian, its employees, servants or agents. Sourcewell will not withhold from payments to Gordian any federal, state or unemployment taxes, federal or state income taxes, Social Security tax, or any other amounts for benefits to Gordian or its employees, servants or agents. Furthermore, Sourcewell will not provide to Gordian any insurance coverage or other benefits, including workers' compensation, normally provided by Sourcewell for its employees.

D. **Hold Harmless**: Gordian will indemnify and hold Sourcewell harmless from all claims and demands that may result from its acts or omissions in performance of this Agreement, excluding any claims arising from the negligence or willful misconduct of Sourcewell or any of its representatives, agents or employees. Sourcewell's responsibility will be governed by the State of Minnesota's Tort Liability Act (Minnesota Statutes Chapter 466) and other applicable law.

E. **Amendments**: Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

F. **Severability**: In the event that any term of this Agreement is in conflict with or is otherwise unenforceable under any rule, law, or statutory provision, such terms will be deemed stricken from this Agreement, but such invalidity or unenforceability will not invalidate any

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other terms of the Agreement unless the invalidity or unenforceability of such provisions substantially harms, compromises an integral part of, or are otherwise inseparable from the remainder of this Agreement.

G. **Waiver**: Failure by either party to take action or assert any right under this Agreement will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right.

H. **Endorsement**: Gordian must not claim that Sourcewell endorses its products or services.

I. **Agreement Complete**: This Agreement contains all negotiations and agreements between the parties. No other understanding regarding this Agreement, whether written or oral, may be used to bind either party.

ARTICLE 10: TERMINATION

Either party may terminate this Agreement by providing 90 calendar days' written notice to the other party. Unless otherwise agreed by the parties, termination under this section will not relieve Sourcewell of its obligation to pay for satisfactorily completed services.

IN WITNESS WHEREOF, the parties have executed this Agreement.

Sourcewell

DocuSigned by:
By: Jeremy Schwartz
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Authorized Signature

Jeremy Schwartz
Name – Printed

Title: Director of Operations & Procurement/CPO

Date: 9/16/2020 | 4:13 PM CDT

The Gordian Group, Inc.

DocuSigned by:
By: Ammon Lesher
2005815C104D406...
Authorized Signature

Ammon Lesher
Name – Printed

Title: Vice President / General Counsel

Date: 9/16/2020 | 4:08 PM CDT

Sourcewell–APPROVED:

DocuSigned by:
By: Chad Coauette
Authorized Signature

Chad Coauette
Name – Printed

Title: Executive Director/CEO

Date: 9/16/2020 | 4:17 PM CDT

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SOURCEWELL- GORDIAN
PROFESSIONAL SERVICES AGREEMENT
Intergovernmental Support Agreement Addendum

This ADDENDUM to the PROFESSIONAL SERVICES AGREEMENT between Sourcewell, 202 12th Street Northeast, PO Box 219, Staples, MN 56479 and The Gordian Group, Inc., 30 Patewood Drive, Suite 350, Greenville, SC 29615 (Gordian), Contract No. 091620-GGI, dated September 16, 2020, is effective upon final signature date.

This Addendum supplements the Professional Services Agreement and includes necessary process and contractual changes required to provide indefinite delivery/indefinite quantity construction contracting services (IDIQ Construction Services) to Sourcewell's Installation Support Program (ISP) on behalf of the United States Department of Defense (DoD) Installations through the use of an Intergovernmental Support Agreement (IGSA). Sourcewell and Gordian have agreed these supplemental terms, and to the extent applicable, the terms of the Professional Services Agreement will govern the ISP for IDIQ Construction Services.

Sourcewell is an eligible IGSA local government partner and has entered or will enter into one or more agreements with DoD Installations under a cost reimbursable contract to provide installation support services including facility maintenance, repairs, base operations support services, supplies, equipment, and minor construction services.

The operation of the EZIQC program and the terms of the Professional Services Agreement for Participating Entities is not changed by this Addendum. This Addendum applies only to the Installation Support Program.

Article 2: GORDIAN'S DUTIES

B. **EZIQC Contract Administration**: Gordian will be responsible for assisting Sourcewell in the procurement of the contracts of Sourcewell-awarded EZIQC Contractors including:

3. Contractual Terms and Conditions and Bid Forms: Gordian will provide technical assistance to Sourcewell staff, as requested, in the preparation of contractual terms and conditions, and bid forms, which incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Sourcewell and Gordian will mutually agree on the final form of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Sourcewell for the ISP including Price Proposal, Task Orders, payment terms, and minimum qualifications required for an EZIQC Contract award. Sourcewell will

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have final approval over all other content of the EZIQC Contracts except as set forth above.

C. **Information Management System:** Gordian will be responsible for providing the web-based JOC Information Management System (IMS) for an unlimited number of EZIQC Contractors for the purpose of executing work procured through the EZIQC Program subject to the terms of Gordian's JOC System License. The JOC IMS must be capable of providing full project tracking, developing cost proposals, generating project documentation, providing project scheduling, tracking diverse supplier participation (W/MBE, SBE, and Veteran- Owned businesses), and generating standard program reports as requested by Sourcewell. Gordian will not be responsible for providing access to, or training on, the JOC IMS to Sourcewell or any Installation in connection with the ISP.

E. Marketing Support :

1. Installation Recruitment and Onboarding: Gordian and Sourcewell will coordinate all activities related to recruiting additional Installations into the ISP. These coordination activities must include but are not limited to; identifying and prioritizing potential Installations; review and analysis of procurement rules within states for non-IGSA IDIQ contract viability; development and maintenance of priority list based on Installation needs and Sourcewell capacity; and development of consistent materials for educating Installations on the ISP and onboarding procedures.

F. Job Order Initiation and Development: Gordian will be responsible for providing the following Job Order Development services:

1. Project Identification and Initiation: Sourcewell will contact Gordian with any Installation project requests for assistance. Gordian will respond to Sourcewell within 48 hours of receipt of such request. Gordian will have the discretion to deny the requested assistance for any reason.

2. Contractor Identification: In the event Sourcewell requests a Joint Scope Meeting on behalf of an Installation to discuss the potential project, Gordian will provide the Installation with a list of available EZIQC Contractors for the project based on factors which include, but are not limited to, the type of work involved, and the location of the project. Sourcewell and Installation will be responsible for approving the selected EZIQC Contractor for the project.

3. Joint Scope Meeting: Upon request of Sourcewell, Gordian will schedule a Joint Scope Meeting at the project site to help Installation and the EZIQC Contractor agree on the details of the work that the EZIQC Contractor will perform. The purpose of the scoping process is to allow the EZIQC Contractor an opportunity to inspect the site and ask questions before submitting a Price Proposal.

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4. Develop Detailed Scope of Work: Gordian will assist Sourcewell, Installation, and EZIQC Contractor with preparing a Detailed Scope of Work that describes the work the EZIQC Contractor will perform. Gordian will also assist with resolving issues when project plans and actual conditions vary.

5. Request for Price Proposal: If requested by Sourcewell or Installation, after all parties are in agreement that the Detailed Scope of Work properly reflects the work to be performed, Gordian's project manager will send the Detailed Scope of Work and a Request for Proposal to the EZIQC Contractor.

6. Price Proposal Review: Gordian's project manager will review the Price Proposal to make sure the EZIQC Contractor has selected the appropriate tasks and quantities and will request the EZIQC Contractor to make any required changes to ensure the Price Proposal reflects the appropriate means and methods for accomplishing the Detailed Scope of Work. Gordian will also obtain and review any Sourcewell or Installation required information submitted by the EZIQC Contractor such as a construction schedule and list of proposed subcontractors. Gordian's project manager will submit the Price Proposal and related documents to Sourcewell. Sourcewell will incorporate the Price Proposal for review and approval by Installation.

7. Task Order Issuance: Upon receipt by Sourcewell of the review and approval by Installation of the Price Proposal including confirmation sufficient funding has been obligated by Installation, Sourcewell will work with Gordian to create and issue the Task Order to the selected EZIQC Contractor to initiate the completion of the project. Upon acceptance of the Task Order by EZIQC Contractor, Sourcewell will confirm with Installation and issue notice-to-proceed.

8. Construction Process and Project Management Services: During development of the Detailed Scope of Work, Sourcewell and Installation may request Project Management Services from Gordian to be included for specific projects. If Project Management Services are not requested by Installation, Installation will be responsible for all construction management activities. If Sourcewell and Installation request Project Management Services from Gordian and if accepted by Gordian, the description of services to be provided and proposed pricing will be submitted. If accepted, the applicable rate will be incorporated into the Price Proposal and Task Order.

9. Supplemental Job Orders: In the event unforeseen conditions arise or Installation and Sourcewell desire to change the Detailed Scope of Work, Gordian will assist Sourcewell with the development of a supplemental Job Order in the same manner as the original Job Order, including the approval process between Sourcewell and Installation as defined herein.

H. Accounting, Collections and Remittance of Administrative Fees: Gordian will be responsible for providing Sourcewell with a designated representative to coordinate all

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associated invoicing and collection efforts relating to the EZIQC program. Gordian's designated accounting representative will be a member of the accounting department with primary responsibility for overseeing the invoicing and collection of payments from the EZIQC Contractors. In addition, Gordian will:

1. Invoice and collect all applicable fees, including Project Management Fees if selected by Sourcewell and Installation on a per project basis, from the EZIQC Contractors in accordance with the terms of Article 5 and will remit, via electronic payment, the Sourcewell Administrative Fee (as defined in Article 5) on a monthly basis for all Sourcewell Administrative Fees collected during the preceding month.

    i. The parties agree that as a condition precedent to Gordian's obligation to remit the Sourcewell Administrative Fee, Gordian must first receive payment in full for the Gordian Administrative Fee (as defined in Article VIII). In the event Gordian does not receive payment of the Gordian Administrative Fee in full, for any reason, Gordian will not be liable to Sourcewell for payment of the Sourcewell Administrative Fee.

2. Provide Sourcewell with a monthly report detailing all Sourcewell Administrative Fees collected during the previous month including Sourcewell contract number, project names, project values, and the fees collected. The monthly report will be in the sales reporting template format developed and provided by Sourcewell. Sourcewell may request additional reports specifically identifying ISP projects.

3. Gordian must consult Sourcewell before initiating any litigation seeking any unpaid balances owed by any EZIQC Contractor resulting from an ISP project.

ARTICLE 3: SOURCEWELL DUTIES AND RESPONSIBILITIES

Sourcewell will perform the following duties and responsibilities to complete the Services:

A. **EZIQC Contract Procurement**:

3. Contractual Terms and Conditions and Bid Forms: Sourcewell will prepare contractual terms and conditions, and bid forms, that incorporate best practices for the execution of indefinite delivery/indefinite quantity construction contracts in accordance with the applicable procurement statutes in the jurisdiction where such EZIQC Contracts are being procured. Sourcewell and Gordian will mutually agree on the final form of the terms and conditions of the EZIQC Contracts as related exclusively to the ordering, processing, and execution of the projects procured by Sourcewell for the ISP including Price Proposals, Task Orders,

DocuSign Envelope ID: 4E406C2A-D540-4921-9657-A9A627CF60BF

payment terms and minimum qualifications required for an EZIQC Contract award. Sourcewell will have final approval over all other content of the EZIQC Contracts except as set forth above.

B. **Marketing Suppor**t:

1. Installation Recruitment and Onboarding: Gordian and Sourcewell will coordinate all activities related to recruiting additional Installations into the ISP. These coordination activities must include but is not limited to; identifying and prioritizing potential Installations; review and analysis of procurement rules within states for non-IGSA Support IDIQ contract viability; development and maintenance of priority list base on Installation needs and Sourcewell capacity; and development of consistent materials for educating Installations on the ISP and onboarding procedures.

ARTICLE 5: CONSIDERATION AND PAYMENT

Sections C (State of Georgia) and D (E&I Cooperative Services) do not apply on any ISP project.

ADDENDUM APPROVAL

IN WITNESS WHEREOF, the parties have executed this Agreement.

Sourcewell

DocuSigned by:
By: Jeremy Schwartz
4988402DA74D41E...

Name: Jeremy Schwartz

Title: Chief Operating and Procurement Officer

Date: 08/30/2023 | 10:13 AM EDT

The Gordian Group, Inc.

DocuSigned by:
By: Matt Bausher
12DBAF0CE2B4409...

Name: Matt Bausher

Title: Chief Customer Officer

Date: 08/17/2023 | 8:25 AM EDT

Sourcewell–APPROVED:

DocuSigned by:
By: Chad Coauette
48BAF71B0894454...

Name: Chad Coauette

Title: CEO

Date: 08/30/2023 | 10:23 AM EDT

Sponsored by: Interim City Manager

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO ACCEPT THE PROPOSAL OF SSN ENGINEERING, LLC FOR SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING SERVICES, PURSUANT TO RFQ NO. 24-1011200 AND FURTHER AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO NEGOTIATIONS WITH SSN ENGINEERING, LLC FOR SAME; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Request for Qualifications (RFQ) 24-1011200 was published on Sept. 9, 2024, for Sanitary Sewer Collection System Hydraulic Modeling Services;

WHEREAS, one (1) company submitted a proposal which was certified by the City Clerk on October 11, 2024; and

WHEREAS, a Selection Committee Meeting of City employees convened to review the bidder's proposal and evaluate the firm. The Selection Committee scored the bidder with a maximum of 100 points based on the following criteria: 1) Firm Qualifications, Qualifications of Team Members; 2) Firm Experience; 3) Methodology & Approach; and

WHEREAS, after careful consideration, the Committee recommends engaging SSN Engineering, LLC. for Sanitary Sewer Collection System Hydraulic Modeling Services; and

WHEREAS, the SSN Engineering team is familiar with the local codes and design guidelines for city, county, drainage districts, water, and wastewater districts, Florida Department of Transportation (FDOT), Florida Department of Environmental Protection (FDEP), and any other applicable agencies, to provide design and engineering services that will meet the City's requirements; and

WHEREAS, the City Commission finds that it is in the best interest of the City and its residents to accept the proposal of SSN Engineering, LLC. for Sanitary Sewer Collection System Hydraulic Modeling Services, attached hereto as Exhibit "A" and further authorizes the Interim City Manager to enter into negotiation with SSN Engineering, LLC. for same.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA LOCKA, FLORIDA:

SECTION 1. RECITALS ADOPTED.
The recitals to the preamble herein are incorporated by reference.

SECTION 2. AUTHORIZATION
The City Commission of the City of Opa-Locka hereby authorizes the Interim City Manager to accept the proposal of SSN Engineering, LLC. for Sanitary Sewer Collection System Hydraulic Modeling Services, attached hereto as Exhibit "A" and further authorizes the Interim City Manager to enter into negotiations with SSN Engineering, LLC. for same.

SECTION 3. SCRIVENER'S ERRORS.
Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the Interim City Manager, following review by the City Attorney and without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. EFFECTIVE DATE.
This Resolution shall be effective immediately upon adoption hereof and approval by the Governor of the State of Florida or Governor's designee.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass _____
Commissioner Kelley _____
Commissioner Williams _____
Vice Mayor Ervin _____
Mayor Taylor _____

City of Opa-locka
Agenda Cover Memo

Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**				
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**	
				X				
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**	
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		X
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**	
							X	
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**					
		X	**No. 24-1011200**					
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:**		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*			
	X		**Enhance Organizational** ■ **Bus. & Economic Dev** ☐ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ☐ **Communication** ☐					
Sponsor Name	Interim City Manager		**Department:**		City Manager			

Short Title:

A RESOLUTION AUTHORIZING THE INTERIM CITY MANAGER TO ACCEPT THE PROPOSAL OF SSN ENGINEERING LLC FOR SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING PURSUANT TO RFQ NO. 24-1011200 AND FURTHER AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO NEGOTIATIONS WITH SSN ENGINEERING, LLC FOR SAID SERVICES.

Staff Summary:

Request for Qualifications (RFQ) 24-1011200 was published on Sept. 9, 2024, for Sanitary Sewer Collection System Hydraulic Modeling. One (1) company submitted a proposal which was certified by the City Clerk on October 11, 2024.

A Selection Committee Meeting of City employees convened to review the bidder proposal and evaluate the firm. The Selection Committee scored the bidder with a maximum of 100 points based on the following criteria:

1. Firm Qualifications, Qualifications of Team Members
2. Firm Experience
3. Methodology & Approach

After careful consideration, the committee recommends engaging SSN Engineering, LLC. for Sanitary Sewer Collection System Hydraulic Modeling. SSN Engineering, LLC, offers a proven track record of recent and specialized experience that aligns closely with our current needs.

The SSN Engineering team is familiar with the local codes and design guidelines for city, county, drainage districts, water, and wastewater districts, FDOT, FDEP, and any other applicable agencies, to provide design and engineering services that will meet the City's requirements. SSN Engineering, LLC (SSN), founded in Florida in 2011, is a CBE/DBE/SBE certified firm and is proud to be a company focused on public services throughout the past 13 years with 20+ years of experience of the SSN professionals. SSN has an office within a few miles of the City of Opa-locka, which makes them a unique firm for faster communication with City staff. The firm has also completed projects for the Cities of Margate, Tamarac and Sunrise. The budgeted allocation is $150,000.

Financial Impact: There is no financial impact associated with this item at this time. Upon Commission approval of this RFQ recommendation, negotiations will commence in accordance with the State Consultant's Competitive Negotiation Act (CCNA) requirements. A final negotiated proposal, including the financial impact for the Sanitary Sewer Collection System Hydraulic Modeling system, will then be submitted to the Commission for final approval.

Proposed Action:

Staff recommend the City Commission approve the recommendation for SSN Engineering, LLC and authorize the Interim City Manager to enter into negotiations with said company.

Attachment:

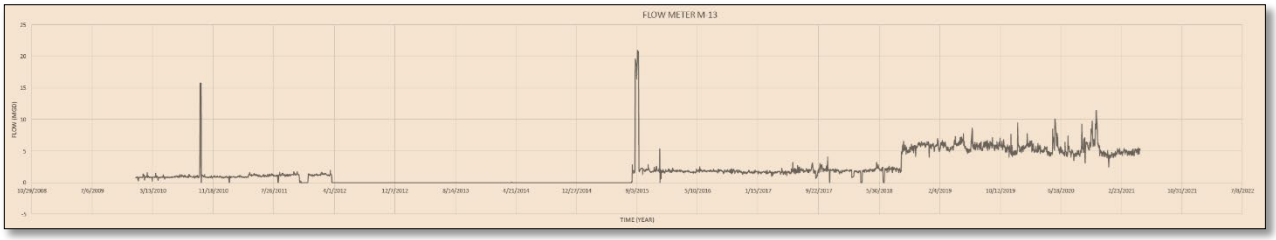
Bid Certification
RFQ 24-1011200
Bid Proposal

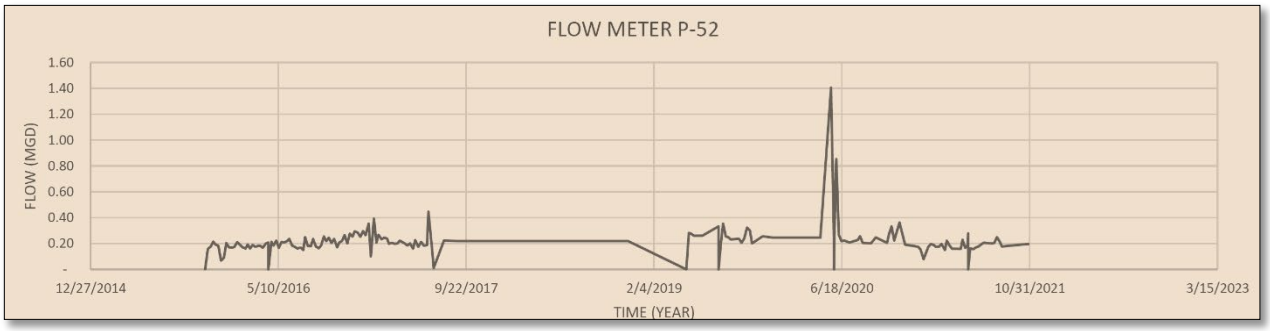
REQUEST FOR QUALIFICATION

SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING

RFQ NO: 24-1011200







OCTOBER 11, 2024

SSN ENGINEERING

RFP No. 24-1011200

SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING

SSN Engineering, LLC

Address:
12550 Biscayne Blvd, Suite 800-34
North Miami, FL 33181

Contact Person:
Rubel Siddique, PE

Phone Number:
(561) 951-3864

Email:
rsiddique@ssnengineering.com

Date:
October 11, 2024

TAB-1

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TAB-2

Letter of Transmittal

(954) 944-3272
(561) 951-3864
www.ssnengineering.com
rsiddique@ssnengineering.com

October 11, 2024

Joanna Flores
Office of the City Clerk
The City of Opa-locka
780 Fisherman Street, 4th Floor.
Opa-locka, FL 33054

RE: RFQ No: 24-1011200
Sanitary Sewer Collection System Hydraulic Modeling

Dear Members of the Evaluation Committee:

SSN Engineering, LLC (SSN) is pleased to present its qualifications and approach for delivering projects under RFQ No: 24-1011200, Sanitary Sewer Collection System Hydraulic Modeling Services for the City of Opa-Locka. SSN Engineering has experience, expertise and is committed to providing the highest quality of services through innovative and cost-effective solutions. SSN team is familiar with the local codes and design guidelines for city, county, drainage districts, water, and wastewater districts, FDOT, FDEP, and any other applicable agencies, to provide design services that will meet the City's expectation of excellence. **The initial XPSWMM model for the entire sanitary sewer system network for the City of Opa-locka was developed by SSN Engineering. In addition, SSN Engineering was involved in creating the City-wide Water and Sewer Atlas. The city would like to optimize the transmission capacity of the sewer collection system by incorporating latest demand, infiltration, and inflow into the existing model and calibrate it to better represent the actual sewer system network. Our direct experience in developing the XPSWMM model for the City of Opa-locka made us an ideal candidate for this project. We are ready to apply our experience and lessons learned from our prior experience working on this model.**

TEAM OVERVIEW

SSN Engineering, LLC (SSN), founded in Florida in 2011. SSN is a CBE/DBE/SBE certified firm and is proud to be a company focused on public services throughout the past 13 years with 20+ years of experience of the SSN professionals. SSN has an office within a few miles of the city of Opa-locka, which makes us a unique firm for faster communication with the city staff. We have created partnerships and fostered long-lasting relationships with cities, counties, and state agencies by providing a deep pool of highly qualified professional engineers, modelers, personalized customer service, high quality deliverables and innovative solutions.

PROJECT UNDERSTANDING

We understand that the purpose of this solicitation is to optimize the existing XPSWMM model by incorporating current demand, infiltration, and inflow. We understand the projects will require visiting each property and talking with the occupant to collect sewer flow data. The sewer data collection will also be done by reviewing water bills from the City of Opa-locka. We will also collect concurrent rainfall data from South Florida Water Management District (SFWMD) and the City of Opa-locka. All these collected data will then be inserted into the model to calibrate and validate by adjusting the variables. We will establish two (2) dry models and three (3) wet flow models and perform relative analysis. The report will be updated based on the new data, models, analysis, and recommendations.

SIMILAR ROJECT EXPERIENCE

SSN Engineering have direct experience working with the Miami-Dade County in updating the storm water master plan under the contract EDP-PE-DE-32WM. Our staff have hands-on experience in XPSWMM, MIKE-SHE, and other modeling software. This experience will help the city to expedite the calibration of the City's current hydraulic and hydrologic model using XPSWMM. Since our staff has developed the City of Opa-locka's current sanitary sewer system network model from scratch using the XP-SWMM software, SSN is the ideal candidate to calibrate and update this model. Our staff also have experience working with GIS data files to obtain information and incorporate in AutoCAD plans, sections, and details. The firm's computer capabilities include a wide array of CADD systems, ArcGIS software, XP-SWMM, MIKE-SHE, and other design software. These systems, in the hands of our experienced engineers, assist us in putting high quality designs and construction documents quickly and efficiently.

KEY PROJECT STAFF

Rubel Siddique, PE: I, with 20+ years of production and management experience with water, sewer, and transportation design projects, plan reviews, and drainage design throughout South Florida, will be the project manager and principal point of contact for this contract. I have vast experience and have been successful on numerous City of Opa-locka and Miami-Dade County projects. I am a hands-on project manager who will maintain effective communication with the City's PM and stakeholders, as well as our team members for general project oversight. I have worked on several private and city projects with the city of Opa-locka for sanitary pump stations, water and wastewater design, roadway design, permitting, and certification.

MD Rahman, PE: will be the lead engineer for this project and has over 20+ years of extensive experience working on civil, drainage, and roadway projects. He is well versed in managing and designing projects involving design and preparation of construction documents water, sewer, drainage, roadway, parking lot, and **stormwater and wastewater modeling**. Mr. Rahman was the primary staff to create the sanitary sewer model for the city of Opa-locka. He is currently working on several stormwater projects that include drainage improvement design, hydraulic modeling, water quality modeling, permitting, and construction engineering inspection. Mr. Rahman also worked on updating the Miami-Dade County Stormwater master plan using XPSWMM.

Mohammad Rasheduzzaman: Mr. Rasheduzzaman, with over 20 years of direct experience in storm and sewer modeling, will be assisting Mr. Rahman in this task. This individual has utilized **XPSWMM** for urban drainage modeling, assessing stormwater runoff and designing drainage systems to mitigate flood risks in urban areas. He also applied **MIKE-SHE** for integrated surface water and groundwater modeling, analyzing hydrological processes and simulating water flow dynamics to support watershed management projects, conducted detailed statistical comparisons and analysis of observed and simulated data from **XPSWMM** and **MIKE-SHE**, ensuring model accuracy and reliability for engineering design and environmental impact assessments. Collaborated with interdisciplinary teams to integrate modeling results into comprehensive reports and presentations for clients and regulatory authorities.

We believe that we are an excellent choice for this project given our past performance on similar projects, and the expertise of our staff will exceed the City's expectations. Our team provides you with the ability to meet and exceed project schedules and deadlines, a shared commitment to quality, a proactive approach to design, and responsive communication. We respectfully request that you consider our team for shortlisting so we can demonstrate our knowledge and capabilities for this specific project. If given the opportunity, we are confident that we can deliver this project on schedule and within the budget and we look forward to continuing serving the city of Opa-locka.

Sincerely,

Rubel Siddique

Rubel Siddique, P.E.
Project Manager
SSN ENGINEERING, LLC

TAB-3

General Information

State of Florida
Department of State

I certify from the records of this office that SSN ENGINEERING, LLC is a limited liability company organized under the laws of the State of Florida, filed on August 1, 2011, effective July 31, 2011.

The document number of this limited liability company is L11000087864.

I further certify that said limited liability company has paid all fees due this office through December 31, 2024, that its most recent annual report was filed on January 31, 2024, and that its status is active.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-second day of July, 2024



Secretary of State

Tracking Number: 2622323186CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

State of Florida

Florida Board of Professional Engineers

Attests that

SSN Engineering LLC

Has satisfied the requirements of Section 471,023, Florida Statutes. In recognition thereof, the Board of Professional Engineers hereby authorizes this firm to offer engineering services in the State of Florida in accordance with Chapter 471, Florida Statutes, and the rules of the Board.

Witness the Seal of the Board and the Signature
of the Board's duly authorized Chair
this 6 day of OCT, 2011

Certificate of
Authorization No. **29695**

John C. Burke
Chair

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

SIDDIQUE, RUBEL

5518 MAINSHIP DR.
GREENACRES FL 33463

LICENSE NUMBER: PE67239

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

RAHMAN, MD SHAHINUR

11186 SW 17T MNR
DAVIE FL 33324

LICENSE NUMBER: PE80669

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Local Business Tax Receipt

Miami–Dade County, State of Florida

–THIS IS NOT A BILL – DO NOT PAY

LBT

7167802

RECEIPT NO.
RENEWAL
7446371

EXPIRES
SEPTEMBER 30, 2025

Must be displayed at place of business
Pursuant to County Code
Chapter 8A – Art. 9 & 10

BUSINESS NAME/LOCATION
SSN ENGINEERING LLC
12550 BISCAYNE BLVD # 800-34
NORTH MIAMI, FL 33181-2541

OWNER
SSN ENGINEERING LLC
C/O MD SHAHINUR RAHMAN MGR

Employee(s) 1

SEC. | **TYPE OF BUSINESS**
212 | P.A./CORP/PARTNERSHIP/FIRM

PAYMENT RECEIVED BY TAX COLLECTOR
45.00 07/15/2024
INT-24-429913

This Local Business Tax Receipt only confirms payment of the Local Business Tax. The Receipt is not a license, permit, or a certification of the holder's qualifications, to do business. Holder must comply with any governmental or nongovernmental regulatory laws and requirements which apply to the business.

The RECEIPT NO. above must be displayed on all commercial vehicles – Miami–Dade Code Sec 8a–276.

For more information, visit www.miamidade.gov/taxcollector

MIAMI-DADE COUNTY

MIAMI-DADE COUNTY
Daniella Levine Cava, Mayor

Office of Small Business Development
111 NW 1 Street, 19th Floor
Miami, Florida 33128
T 305-375-3111 F 305-375-3160
miamidade.gov

January 3, 2024

MD Shahinur Rahman
SSN Engineering, LLC
5518 Mainship Dr
Suite 310
Greenacres, FL 33463

Approval Date: September 30, 2023 Small Business Enterprise - Architectural & Engineering (SBE-A&E)
Expiration Date: September 30, 2026

Dear MD Shahinur Rahman,

Miami-Dade County Office of Small Business Development (SBD), has completed the review of your application and attachments submitted for certification. Your firm is officially certified as a Miami-Dade County Small Business Enterprise. The Small Business Enterprise (SBE) programs are governed by Sections 2-8.1.1.1.1; 2-8.1.1.1.2; 2-10.4.01; 10-33.02 of Miami-Dade County's Codes. This Small Business Enterprise - Architectural & Engineering (SBE-A&E) certification is valid for three (3) years. However, to validate continuing eligibility, SBD may conduct random audit(s) within the three (3) year certification period. **Failure to provide required documentation for a random audit will initiate the decertification process.**

At the time of expiration, your firm will submit a Re-certification Application at least one hundred and eighty (180) days, but not less than, ninety (90) days, prior to the end of the three (3) year certification term via the County's web-based system, Business Management Workforce System (BMWS). This will ensure sufficient time for process by SBD. **Failure to provide the re-certification application and required supporting documentation will initiate the decertification process.**

If at any time there is a material or business structure change in the firm including, but not limited to, ownership, officers, director, scope of work being performed, daily operations, affiliations(s) with other businesses or the physical location of the firm, you must notify this office within thirty (30) calendar days of the effective date of the change(s) via the BMWS. Notification should include supporting documentation. You will receive timely instructions from this office as to how you should proceed, if necessary. **Failure to notify SBD of any changes may result in immediate action to decertify the firm.**

This letter will be the only approval notification issued for the duration of your firm's three-year certification. If the firm attains graduation or becomes ineligible during the three-year certification period, you will be properly notified following an administrative process that your firm's certification has been removed pursuant to the code. Your firm's name and tier level will be listed in the directory for all SBE certified firms, which can be accessed through Miami-Dade County's SBD website: https://www.miamidade.gov/global/business/smallbusiness/home.page. The categories as listed below affords you the opportunity to bid and participate on contracts with Small Business Enterprise measures.

It is strongly recommended that you register your firm as a bidder with Miami-Dade County. To register, you may visit: https://www.miamidade.gov/global/business/procurement/home.page. Thank you for your interest in doing business with Miami-Dade County. If you have any questions or concerns, you may contact our office at 305-375-3111 or via email at sbdcert@miamidade.gov.

Sincerely,

Jeanise Cummings-Labossiere
Section Chief, Small Business Development

CATEGORIES: (Your firm may bid or participate on contracts only under these categories)

MDC-TCC 03-01: SITE DEVELOPMENT AND PARKING LOT DESIGN
MDC-TCC 03-02: MAJOR HIGHWAY DESIGN
MDC-TCC 03-02B: MINOR HIGHWAY DESIGN
MDC-TCC 03-04: TRAFFIC ENGINEERING STUDIES
MDC-TCC 03-06: TRAFFIC CALMING
MDC-TCC 03-09: SIGNING, PAVEMENT MARKING, AND CHANNELIZATION
MDC-TCC 06-01: WATER DISTRIBUTION AND SANITARY SEWAGE COLLECTION AND TRANSMISSION
MDC-TCC 06-02: WATER AND SANITARY SEWAGE PUMPING FACILITIES
MDC-TCC 10-01: STORMWATER DRAINAGE DESIGN ENGINEERING SERVICES
MDC-TCC 10-09: WELLFIELD, GROUNDWATER, AND SURFACE WATER PROTECTION AND MANAGEMENT
MDC-TCC 11: GENERAL STRUCTURAL ENGINEERING
MDC-TCC 16: GENERAL CIVIL ENGINEERING
MDC-TCC 17: ENGINEERING CONSTRUCTION MANAGEMENT
NAICS 541330: ENGINEERING SERVICES

MIAMI-DADE COUNTY PUBLIC SCHOOLS

Micro Business Enterprise (Micro) Certificate

THIS CERTIFIES THAT

SSN Engineering, LLC

IS OWNED AND CONTROLLED BY A(N)

MBE Tier 1

PURSUANT TO MIAMI-DADE COUNTY PUBLIC SCHOOL BOARD POLICY 6320.02

August 19, 2024	August 19, 2027	6519297
Issue Date	Expiration Date	Vendor No.

The following areas that your firm has been certified:
NIGP 92517: CIVIL ENGINEERING

Dr. Linda A. Amica-Roberts
Assistant Superintendent, Equity & Diversity
Office of Economic Opportunity
Miami-Dade County Public Schools
1450 NE 2nd Avenue - Suite 428
Miami, Florida 33132

MIAMI-DADE COUNTY PUBLIC SCHOOLS

Minority/Women Business Enterprise (MWBE) Certificate

THIS CERTIFIES THAT

SSN Engineering, LLC

IS OWNED AND CONTROLLED BY A(N)

ASIAN AMERICAN

PURSUANT TO MIAMI-DADE COUNTY PUBLIC SCHOOL BOARD POLICY 6320.02

August 19, 2024	August 19, 2027	6519297
Issue Date	Expiration Date	Vendor No.

The following areas that your firm has been certified:
NIGP 92517: CIVIL ENGINEERING

Dr. Linda A. Amica-Roberts
Assistant Superintendent, Equity & Diversity
Office of Economic Opportunity
Miami-Dade County Public Schools
1450 NE 2nd Avenue - Suite 428
Miami, Florida 33132

Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

December 10, 2012

BM RUBEL SIDDIQUE
SSN ENGINEERING LLC
5433 SEALINE BLVD`
GREENACRES FL 33463

ANNIVERSARY DATE - Annually on December 10

Dear Mr. Siddique:

The Florida Department of Transportation (FDOT) is pleased to announce that your firm has been certified under Florida's Unified Certification Program (UCP) as a Disadvantaged Business Enterprise (DBE) **in accordance with 49 Code of Federal Regulation Part 26.**

DBE Certification is continuing, but it is contingent upon the firm maintaining its eligibility annually through this office. You will be notified of your annual responsibilities in advance of the Anniversary Date. You must submit the annual AFFIDAVIT FOR CONTINUING ELIGIBILITY **no later than the** Anniversary Date**.**

Only firms listed in the UCP DBE Directory are certified by Florida UCP Members. Prime contractors and consultants should verify your firm's DBE certification status, **and identify the work area(s) for which the firm is DBE eligible, through this Directory.**

Your firm will be listed in Florida's UCP DBE Directory which can be accessed through the Department's website: www.dot.state.fl.us/equalopportunityoffice and then selecting "DBE Directory".

DBE certification is NOT a guarantee of work. It allows your firm to compete for and perform contract work on ALL USDOT Federal Aid (FAA, FTA, and FHWA) projects in Florida as a DBE contractor, sub-contractor, consultant, sub-consultant or material supplier.

If, at any time there is a material change you must advise this office, by sworn affidavit and supporting documents, within thirty (30) days. Changes include, but are not limited to, ownership, officers, directors, management, key personnel, scope of work performed, daily operations, ongoing business relationships with other firms or individuals, or the physical location of your firm. After our review, you will receive instructions as to how you should proceed, if necessary. Failure to do so will

be deemed a failure, on your part, to cooperate, and will result in immediate action to remove DBE certification.

Your firm is eligible to compete for and perform work on all USDOT Federal Aid projects throughout Florida and may earn DBE credit for work performed in the following areas:

NAICS
54133 -Engineering Services
54134 -Drafting Services
54199 -All Other Professional, Scientific, and Technical Services
56199 -All Other Support Services

FDOT Specialty Codes
300 -Consultants
941 -Civil Engineering Services
947 -Cadd Services
948 -Diving Services For Bridge Inspections

Questions and concerns should be directed to this office by mail or telephone. Our telephone number is (850) 414-4747. Our fax number is (850) 414-4879.

Sincerely,

Victoria Smith
DBE Certification Manager

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road, M.S. 3565
Tallahassee, Florida 32399-2400

Ron DeSantis
Governor

Jeanette Nunez
Lt. Governor

Noah Valenstein
Secretary

Congratulations on successfully completing the Florida Stormwater Erosion and Sedimentation Control Inspector Training Program. We greatly appreciate your participation in and successful completion of this course. We hope that it has helped you to better understand Florida's stormwater problems and the importance of proper design, construction, and maintenance of erosion and sediment controls during construction, in order to assure the proper long-term operation and maintenance of stormwater systems after construction is completed.

Attached you will find your numbered certificate and wallet card. Please let us know if there are any errors in the certificate or card, or in the grading of your exam. You can contact us at admin@fsesci.com, or at the Training Program's website: www.FSESCI.com.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM

Rubel Siddique

CLASS DATE

INSPECTOR # 29215

QUALIFIED STORMWATER MANAGEMENT INSPECTOR
CURRENTLY DOES NOT EXPIRE

QUALIFIED STORMWATER MANAGEMENT INSPECTOR

The undersigned hereby acknowledges that

Rubel Siddique

has successfully met all requirements necessary to be fully qualified through the Florida Department of Environmental Protection Stormwater Erosion and Sedimentation Control Inspector Training Program

Inspector Number 29215

Jared Searcy
Statewide Training Coordinator

Kevin Coyne
WQRP Program Administrator

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

This certificate is presented to

Rubel Siddique

in recognition of successful completion of

CEU: 1.6

Design of Concrete Pavements - NEW (60212015)

03/17/2015

and for demonstrating a commitment to engineering excellence through lifelong learning.

John A. Casazza
Managing Director, Continuing Education

Florida Provider Number:
0003826
Florida Course Number:
0000449

Please retain this certificate for your continuing education records.
1801 Alexander Bell Drive, Reston, VA 20191-4400 Phone: (800) 548-2723

AUTHORIZED IACET PROVIDER

Innovyze®

Certificate of Completion

This award certifies that

Rubel Siddique

has earned 14 PDH Credits for successful completion of the two day training course on

July 15 - 16, 2019 in Broomfield, Colorado

xpswmm/xpstorm®

Stormwater & Flood Modeling Training Course

PDH credits have been granted based on one professional development hour in length, which is defined as a contact hour (nominal) of instruction or presentation.

Instructional delivery method: Technical Training Sessions

J. Erik Heath
Vice President

Instructor

Innovyze, Inc
370 Interlocken Blvd. Ste. 630
Broomfield, CO, 80021

TAB-4

Project Approach

PROJECT APPROACH

The scope of the RFQ No: 24-1011200, Sanitary Sewer Collection System Hydraulic Modeling, is to incorporate current sewer demand, infiltration, and inflow to calibrate the existing XPSWMM model that was created by SSN Engineering.

MANAGEMENT APPROACH

The key to success on Task Work Orders is a well-organized management plan. The management plan will focus on project efficiency, minimizing City staff oversight, and will enable **SSN Engineering** to effectively deliver multiple Task Work Orders simultaneously. We recognize the demands of City staff, so from Project Execution, we will work closely with City Project Managers to keep them apprised of all relevant project issues. For each Task Work Order, a Project Work Plan will be prepared including the following key items to help define the scope, schedule, budget, and expectations for delivery of the contract documents.

1) Management Meeting – Upon initiation of the Task Work Order, Rubel Siddique, P.E. will assign the design team best suited for the task to ensure the project is delivered on time and within budget. We will coordinate with the City Project Manager, and review the scope of services, City's Comprehensive plan, technical reports, City-wide sewer as-builts, etc. to ensure the project objectives are met.

2) Initial Review – An internal **SSN TEAM** field review will be conducted to confirm our review of available documents. We will identify the need for additional scope items.

3) Project Schedule – The **SSN TEAM** understands the need to design and construct each Task Work Order improvement within the contract duration. To meet this goal, we are prepared to provide the resources necessary to accelerate the design phase and conduct critical path coordination efforts early in the design process. We will monitor the project schedule throughout and perform monthly updates with a 60-day look ahead to track critical path items and milestone dates.

4) Project Budget – SSN TEAM will review the initial scope items to identify the risks and mitigate to prevent unexpected cost escalations in later phases.

5) Quality Control/Quality Assurance (QA/QC) – Quality is our #1 priority. SSN has developed a comprehensive QA/QC plan that includes production reviews, independent quality control reviews, constructability reviews, maintainability reviews and interdisciplinary reviews. All design will be subject to an internal QA/QC.

TECHNICAL APPROACH

We will calculate the estimated sewer flow using Miami-Dade County's (MDC) property appraisal and MDC's daily schedule rate. SSN will collect the county's water bill information and compare the estimated sewer flow with the City's water bill information. If any variation is observed, then it will be assumed the City's water bill information is more accurate. SSN will collect the concurrent data MDCWASD pump station data for M-13 and P-52, establish the daily and seasonal variation pattern, and input into the Model. SSN will collect the concurrent rainfall data and input a percentage of rainfall to determine the groundwater infiltration (GWI) using three calibration models for wet conditions. SSN will also run two dry-flow calibration models to determine if there are any GWI in dry conditions. SSN will compare dry and wet conditions calibration Models and add recommendations for current conditions. SSN will run a design model for future city development and recommend future sanitary sewer development for the city. SSN will also prepare a competitive improvement analysis compared to the previous and current models. SSN has both XPSWMM and MIKE-SHE software and our experienced staff are ready to start on this project. Following are more detailed approach to collect data, validation, and calibration.

1) **Data Collection –** Upon initiation, SSN will start communicating with the city project manager to review the scope of services in details that includes but not limited to the existing/proposed sanitary sewer master plan and City's comprehensive plan. Will meet city staff to collect information that is vital for this project such as as-built, surveys, identify areas of deficiency in the sewer network, pump runtime, station moratorium, wet well overflow issues, and any other relevant information.

   As per the scope of services provided by the city, SSN staff will visit properties to interview the residences to collect data to calculate more realistic sewer demand from each property. This will be done by creating a questionnaire form, which will be filled out on-site during the visit to the properties. Some of the data that will be collected are property use type, total floor

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area, number of restrooms with showers or without showers, any issues with sewer flow from the property, water bill amount, and any other required data.

SSN staff will also collect the water bills from the City of Opa-locka and sewer flow from Miami-Dade County to analyze the sewer demand. We will then compare the data collected from the city and county with the data collected from interviewing the residents.

SSN staff will collect rainfall data from the South Florida Water Management District (SFWMD) to estimate the inflow and infiltration to the sewer system network, that is creating negative impact on the capacity of the sanitary sewer system network.

If required, SSN will survey some areas to collect data in the field by hiring a survey sub-consultant. SSN Engineering was directly involved in creating the water and sewer atlas for the City of Opa-locka, therefore, we are very familiar with the City's water and sewer network. The current XPSWMM model was prepared based on the city of Opa-locka's current sewer atlas which was done few years ago. Therefore, the survey services will be required to update the sewer network.

2) **Model Validation –** Validation will be done before calibration. This will be done to check the model definition and setup (geometry, model parameters, node connection).

The model validation will be done in two different ways:

i) We will run the model for the dry flow period to test the model for any capacity issues (overflow) in the node/junction. If any node/junction is overflowed that means the model setup have some issues (geometry, model parameters). We will then identify each problem areas and fix the model until its error free before calibration.

ii) Qualitatively compare the model results with the information of the local people collected during field visits or from the city office. For example, based on the information from local people a certain node never overflowed but the simulation results show otherwise. This may indicate mistakes in the model. SSN staff will analyze and fix the problem areas as necessary.

3) **Model Calibration –** Once the model is ready after fixing overflow issues, we will then start calibrating the model using the collected data. There are different ways to calibrate a model, explained below.

i) **Model calibration using gauge data:** The best way to calibrate a model is by using gauge data. Based on the historical data for flow rate, water level and flow velocity, we can compare the simulation results with these data and adjust the model parameters. Unfortunately, the city does not have flow meters in their pump stations to measure the flow rate. **Therefore, this approach cannot be used until the city installs flow meters in their pump stations. If the city installs the flow meters to their pump stations and flow data is available, we will incorporate those in our model.**

ii) **Model calibration using the data from other studies:** This method uses previous model studies on existing models. SSN Engineering created the sewer model with very limited data and since then the model has never been studied/calibrated. Durning, the development of the model, **SSN Engineering has collected lots of data, which can be used as well in the calibration process.**

iii) **Model calibration using river/stream flow rate:** This an indirect check or calibration of model. In case the model outfall discharges to a river or stream. You can compare the outfall flow rate with upstream and downstream flow rate of the river. You can find historical river/stream flow rate from (StreamStats | U.S. Geological Survey (usgs.gov)). **This approach is mainly for stormwater, therefore not applicable for this project.**

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iv) **Collect data and calibrate the Model:** This is the method we are going to implement, since the limited availability of historical data (measured data) from the city. The data collected as per the method explained in the data collection phase above, will be used in the model to calibrate. **Without measured data, the model will still have some deficiencies if calibrated only by the collected/calculated data. Therefore, we encourage the city of Opa-locka to install flow meters to all the pump stations.**

4) **Deliverables –** SSN Engineering will prepare an updated comprehensive written report describing the work performed, findings, and recommendations to the City of Opa-locka and Miami-Dade County. We will create two (2) dry flow models and three (3) wet flow models.

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TAB-5

Experience and Qualifications

EXPERIENCE AND QUALIFICATIONS

FIRM OVERVIEW AND STAFF QUALIFICATIONS

SSN is a civil engineering firm and was founded in 2011 by professionals with extensive experience in civil engineering, stormwater modeling, sewer modeling, site development and parking lot design, roadway design, signing, pavement marking and channelization design, transportation planning and engineering, stormwater master planning, construction management, and government permitting for municipal clients. We are a certified M/SBE in the state of Florida, Broward County, with numerous local minorities and small business certifications including Miami-Dade and Broward County. SSN has thoroughly reviewed the requirement areas and is committing the necessary resources to perform all project components.

SSN Engineering with local office in North Miami provides quality civil engineering consulting solutions ranging from private to public levels. We provide outstanding quality services to meet client's expectations in conformance with the local codes and regulations. We are experienced in serving a diverse group of clients, including private developers, cities, counties, municipalities, drainage districts, and Florida Department of Transportation. We provide project specific solutions per local codes and ordinances. We are committed to providing quality work within budget and schedule. Our goal is to meet client's engineering and construction needs by providing cost-effective quality services.

SSN is excited to present our team of highly qualified and experienced professionals for your consideration on this project for Sanitary Sewer Collection System Hydraulic Modeling. **Having direct experience with the City of Opa-locka sewer model and sewer atlas, SSN Engineering is the unique candidate for this project.**

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Rubel Siddique, PE (Project Manager/ QA/QC) with more than 20 years of production and management experience with civil water, sewer, and transportation design projects, site development and parking lot design, signing, pavement marking and channelization design, plan reviews for MD-DTPW, and drainage design throughout South Florida. He will be the project manager and principal point of contact for this contract. Mr. Siddique, with vast experience, has been successfully completed numerous Miami-Dade projects including city of Opa-locka. He is a hands-on project manager who will maintain effective communication with the City's PM and stakeholders, as well as our team members for general project oversight. His experience, dedication, and commitment are precisely what the city needs for successful completion of this project.

MD Shahinur Rahman, PE, PMP (Lead Designer) will be the lead design engineer for this project and has over 20 years of extensive experience working on civil, drainage, roadway projects. Mr. Rahman has worked on updating the Miami-Dade County Stormwater Master Plan Model created by XP-SWMM. The tasks involved updating drainage basin C-1, C-2, C-7 and C-100. Tasks included all culverts, canal cross sections, land use, updating ground water information. Validated the model through calibration with SFWMD DBHYDO data. Update the boundary conditions by considering future water elevation rise in the ocean. Produced flood map for different storm events for different future years. Produced mitigation plan to reduce flood effect in the future year. He also worked on creating the city of Opa-locka's initial sewer model from scratch.

Mohammad Rasheduzzaman (Project Engineer) will be the project engineer assisting MD Rahman. He has utilized **XPSWMM** for urban drainage modeling, assessing stormwater runoff and designing drainage systems to mitigate flood risks in urban areas. He also applied **MIKE-SHE** for integrated surface water and groundwater modeling, analyzing hydrological processes and simulating water flow dynamics to support watershed management projects, conducted detailed statistical comparisons and analysis of observed and simulated data from **XPSWMM** and **MIKE-SHE**, ensuring model accuracy and reliability for engineering design and environmental impact assessments. Collaborated with interdisciplinary teams to integrate modeling results into comprehensive reports and presentations for clients and regulatory authorities.

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LIST OF CONTRACTS PERFORMED FOR THE CITY OF OPA-LOCKA

SSN Engineering has provided services to the City of Opa-locka on several projects. Following is the list of projects we have worked for the City of Opa-locka:

- Sanitary Sewer System Modeling
- Pump Station 16 Rehabilitation
- Pump Station 9 Rehabilitation
- Alexandria Drive and Pump Station 7 Improvements
- City-Wide Water and Sewer Atlas
- NW 128th Street Improvements
- Pump Station 5 Rehabilitation
- Pump Station 10 Rehabilitation
- Rutland Street Improvements
- Bahman and Dunad Avenue Improvements
- Burlington Street Improvements

OTHER MUNICIPALITIES EXPERIENCES

Other than Opa-locka, SSN Engineering has been providing services to the following agencies:

- Miami-Dade County Water Control Section – Stormwater Master Plan Update
- Florida Department of Transportation (FDOT) – Several Highway project
- Miami-Dade County Department of Transportation and Public Works (DTPW) – MOT and Traffic Plan Review
- City of Plantation – Plantation Bridge
- Miami-Dade County – SW 117 Ave from US-1 to SW 184 Street
- City of Tamarac – Water's Edge Park
- City of Sunrise – Sunrise Civic Center
- City of Sunrise – Flamingo Park
- City of Deerfield Beach – Quiet Water Park, Kirk Kottrell Pavilion
- City of Coral Springs – Safety Town Building
- City of Miramar – Adult Daycare Center
- City of Boca Raton – Police Storage Building
- City of Margate – DEES Parking Lot Improvements

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EDUCATION

- Master of Engineering in Civil Engineering, University of TX at Arlington, TX, 2004
- Bachelor of Science in Civil Engineering, Bangladesh University of Engineering and Technology (BUET), 1998

PROFESSIONAL CERTIFICATIONS

- Florida PE No. 67239
- Texas PE No. 98510
- Qualified Stormwater Management Inspector Inspector No. 29215

PROFESSIONAL TRAINING

- FDOT Specification
- Project Management Institute (PMI)
- ICPR Software Training
- Professional Liability Training
- Advance MOT Certification

KEY EXPERIENCE

- Site Development
- Parking Lot Analysis and Design
- Water Distribution System
- Sewer Collection System
- Stormwater Management System Design
- Roadway Design
- Minor Structural Design

SUMMARY OF EXPERIENCE

Mr. Siddique has over twenty (20) years of increasingly responsible professional experience in civil engineering related to site development, parking lot design, roadway and drainage design, water supply, water distribution, wastewater collection, stormwater management, project management, and Construction Inspection. Expertise ranges from initial project planning and development to construction management. Experienced in serving a diverse group of clients, including private developers, cities, counties, municipalities, drainage districts, and Florida Department of Transportation. Duties and responsibilities include project management, development of innovative project specific design solutions, leading design team, building coalitions, proactively communication with the cities, counties, state regulatory agencies, environmental groups, and other entities to solve and evaluate input for implementation. Manages and maintains a continuous liaison with functional areas regarding project status, challenges, and needs. Promotes quality performance and establishes guidelines to measure performance.

Mr. Siddique exercised technical and functional supervision, prepares necessary correspondence, daily inspection report, and punch lists. Monitors the status of projects for compliance with construction and engineering standards; recommends corrective actions as needed. As a Principal Engineer maintain municipal client liaisons, schedules to meet client requirements and project goals, and enthusiastically leading the design team members to provide innovative design solutions and construction plans preparations, and monitoring and assuring the Quality Control processes to ensure the top-quality deliverables.

SAMPLE PROJECTS

WATER'S EDGE PARK IMPROVEMENT, CITY OF TAMARAC, FL: SSN Engineering had provided Civil Engineering Design services for the Water's Edge Park improvement. The scope included parking lot design, signing and marking, parking grading, stormwater management system, water distribution system, wastewater collection system, roadway milling and resurfacing, school zone singing and markings, new offsite sidewalk with ADA connection to the proposed site. Prepared construction documents, calculations and reports, permitting documents, reviewed shop drawings, performed periodic site visit, response to RFIs, resolve field issues, provide engineering certification for completed work and submitted to respective agencies to put the services in operation.

KIRK COTTRELL PAVILION DEVELOPMENT, DEERFIELD BEACH, FL: Plans Reviewer- SSN Engineering had provided Civil Engineering Design services for Kirk Cottrell Pavilion redevelopment. The project includes upgrades in support of beach sporting and leisure events including expansion of bathroom facilities, a customer service counter, an interactive digital kiosk screen, ocean rescue storage, new showers, special facilities to store and wash surfboards and pavilion amenities for passive enjoyment of the beach. The scope included parking lot design, parking meter, stormwater management system, water distribution system, wastewater collection system.

The Pavilion has 25 parking lot with one-way traffic circulation with concrete pavement. Out of 25 parking spots, 12 of those parking was 45-degree angle parking, 13 of those parking was 90 degree angle parking with 2 handicap parking. SSN also Prepared construction documents, calculations and reports, permitting documents, reviewed shop drawings, performed periodic site visit, response to RFIs, resolve field issues, provide engineering certification for completed work and submitted to respective agencies to put the services in operation.

CITY OF FORT LAUDERDALE WAYFINDING SIGN, FORT LAUDERDALE, FL: Provided professional structural engineering services for the Citywide Wayfinding Signage. Collected and reviewed all available information such as city of Fort Lauderdale specs, and design standards that may be pertinent to execution of this project. Prepared Calculations that includes load calculations (including wind load calc.), structural analysis, and member design (size and thickness). Drawings were prepared showing proper size and height of signs. Prepared construction plans and details that includes all structural members' plans, sections, elevations and detail as requires, foundation details, member to member connection details and Notes. Structural member, material, bolts & other anchoring system was specified on drawings

TRAFFIC ENGINEERING PLAN REVIEW, EDP-MT-PW-20170287, MIAMI-DADE DTPW, FL: Plans Reviewer- worked as the extension of staff for the Miami-Dade DTPW to review the MOT Plans for FP&L, AT&T, T-Mobile, Verizon, and other Public and Private clients. Reviewed plans for road closures for both open cut and directional bore method of construction. Plans were reviewed to satisfy the criteria such as temporary safety devices requirements provisions; location of the proposed traffic control signs; channelizing devices; detour plans; work zone clear distance; bicycle and pedestrian accommodations; lane closure analysis and lane closure restrictions.

CAIRO LANE AND NW 127TH STREET, MIAMI, FL: The length of the project is approximately one (1) mile. The scope includes reconstruction of Cairo Lane and NW 127th Street, Drainage System Installation, Water Distribution System, and Sewer Distribution System. Analyzed the existing site condition and recommended Concrete pavement for poor sub-surface condition. As the Project Engineer, prepared the contract documents including roadway plans, typical sections, signing and pavement marking plans, construction details, maintenance of traffic plans, permits, construction details, drainage design, utility coordination, final quantities and estimates, final plan submission reviews, and supervision of drafting personnel. Project also included intersection improvement at cross streets, shoulder and sidewalk enhancements.

NW 14th STREET STREETSCAPE PROJECT, CITY OF MIAMI, FL: As the Lead Design Engineer and Engineer of Record, provided design improvements of existing roadway elements. Prepared Typical Section package, pavement design package, 3R report, design variations as per the current FDOT standard. The project entails streetscape improvements such as pavement reconstruction and/or widening, roadway milling and resurfacing, damaged curb and gutter replacement, damaged sidewalk replacement, new ramp construction and existing ramp correction and American Disability Act compliance, drainage improvements as required, swale rehabilitation (regrading and sodding of adjacent areas), utility coordination, permitting, signing and pavement markings.

BURLINGTON STREET ROADWAY AND DRAINAGE IMPROVEMENT PROJECT, FLORIDA: As the lead Design Engineer and Engineer of Record, prepared the contract documents including roadway plans, typical section, signing and pavement marking plans, construction details, maintenance of traffic plans, permits, drainage design, utility coordination, final quantities and estimates, final plan submission reviews, and supervision of drafting personnel. Projects included shoulder and sidewalk enhancements and proposed/replaced new signs as per the 3R safety report. The existing drainage improvements consist of desilting the existing system, repairs or replacements of existing pipes, modifications, and replacements or additions of inlets/manholes with a portion of reconstruction.

MIAMI ART MUSEUM, MIAMI, FLORIDA: As a lead design engineer of this multi-million-dollar project, attended design coordination meeting, permitting agency (City of Miami, DERM and FDOT) meetings. Designed and guided assigned workload to the design team for the construction documents preparation and permitting agencies submittals. Worked as a design lead for the Water Distribution System, Sewer Collection System, Stormwater Management System. The project consists of about 1500 LF of 12" DIP Water Main that provides water services for both Miami Art Museum and Miami Science Museum. Attended weekly design team meetings, meetings with City of Miami, Miami-Dade Water Sewer Department for design co-ordination. Worked closely with the design architect and landscape architect to layout the site elements around the proposed Miami Art Museum Building. Worked with the team to implement the gravel pavement with the concept of green parking technique and to recharge the ground water directly beneath pavement was used to store runoff from parking garage. A network of perforated pipes was designed within the porous pavement to collect stormwater and to direct into exfiltration trenches.

NE 6th AVENUE FROM NE 145th STREET TO MIAMI GARDENS DRIVE (SR860): Served as a Project Engineer for this project, which included milling and resurfacing an existing two-way three-lane divided urban highway. Responsibilities included but not limited to providing solutions to modify the ADA ramps, improved the existing drainage condition. Performed pavement design, prepared typical section package, exception-variation package and implemented access management issues.

EDUCATION

- Master's in science, Texas A&M University-Commerce, 2003
- Bachelor of Science in Civil Engineering, Bangladesh University of Engineering and Technology (BUET), 1998

PROFESSIONAL CERTIFICATIONS

- Florida PE No. 80669
- California PE No. 75093

SOFTWARE SKILLS

- AutoCAD, MicroStation
- HEC-1, HEC-2, HEC-HMS
- HEC-RAS, WATPRO, XPSWMM
- TR-20, TR-55
- ArcMap, Arc Info
- STORMCAD, Water CAD, EPANet

PROFESSIONAL TRAINING

- FDOT Specification
- Project Management Institute (PMI)
- ICPR Software Training
- Professional Liability Training
- Advanced MOT Certification

KEY EXPERIENCE

- Site Development
- Stormwater Management System Design
- Roadway and Signal Design

SUMMARY OF EXPERIENCE

Mr. Rahman has over eighteen (18) years of Drainage/Water resource engineering experience. Effectively able to communicate complicated concepts in an understandable manner, matching the message to the audience. Public speaking and executive management briefing experience. Computer skills include AutoCAD/LDD, MicroStation, ICPR, ASAD, HE-RAS, XP-SWMM, CORSIM, VISSIM, TRANSYT 7, Synchro, HCS, CUBE, GEOPAK, and Primavera P6.

SAMPLE PROJECTS

MIAMI-DADE STORMWATER MASTER PLAN UPDATE, MIAMI-DADE, FL: Mr. MD worked on updating the Miami-Dade County Stormwater Master Plan Model created by XP-SWMM. The tasks involved updating drainage basin C-1, C-2, C-3, C-7, C-8 and C-100. Task included all culverts, canal cross sections, land use, updating ground water information and finally FEMA flood map update. Validated the model through calibration with SFWMD DBHYDO data. Update the boundary conditions by considering future water elevation rise in the ocean. Produced flood map for different storm events for different future years. Produced mitigation plan to reduce flood effect in the future year.

CITY OF OPA-LOCKA SANITARY SEWER MASTER MODEL, CITY OF OPA-LOCKA, FL: Mr. MD created the sanitary sewer master model for the city. The city has 19 pump stations, which were included in the model with all gravity networks. Task included all pump stations, force main, pipe, manholes and rainfall data. Validated the model through calibration with MDWASD data. The model identifies the amount of rainwater infiltrating in the sewer system. Identify the locations of infiltration though rainwater or ground water.

CITY OF DORAL LEGACY PARK, CITY OF DORAL, FL: Mr. MD has created a wet condition mitigation study for the baseball field in Legacy Park. In the report the causes for wet condition of the baseball field were identified and potential solution has been provided. Finally, a set of plans has been produced based on the preferred alternative form the city.

FLAMINGO PARK, CITY OF SUNRISE, FL: SSN Engineering had provided Civil Engineering Design services for the 22 acres of Flamingo Park located at the City of Sunrise, Florida. Mr. MD designed the drainage system for the project. Make the grading for the football field and baseball field.

CIVIC CENTER IMPROVEMENT, CITY OF SUNRISE, FL: SSN Engineering had provided Civil Engineering Design services for the Parking lot, Civic Center, Athletic Club & Gymnasium Addition, located at the City of Sunrise, Florida. Mr. MD designed the drainage system for the project. Make the grading for the plan for the project.

SR 997/KROME AVENUE FROM MM 16.933 TO MM 1.145, MIAMI, FLORIDA: Krome Avenue (6.625 miles) reconstruction project in Miami-Dade County, Florida. The existing Krome Avenue was a rural two-lane undivided highway. MD served as project engineer and duties included Drainage System Design, Drainage Report preparation, Pavement Selection report production, Intersection Improvements, Roadside swale, median swale design, Exfiltration trench design, Spread analysis. Shear Path design, Mast arm signal design, and Permitting.

MDX DESIGN ENGINEERING FOR SR 874 FROM KENDALL DRIVE TO SR 826, MIAMI, FL: While working with Kimley-Horn, was providing design engineering services for SR 874 (Don Shula Expressway) roadway modifications from south of SW 88th Street (Kendall Drive) to south of SR 826 (Palmetto Expressway)/SR 874 interchange. Served as project engineer (Drainage) and Duties included Miami Dade county C-2 and C-3 drainage basin analysis, Developed concept of using different tail water for ground water and surface water in same model, Pond design, Culvert design, Control structure design, Drainage model for entire roadway drainage system and prepared drainage report.

SR 710 (BEELINE HIGHWAY) FROM WEST OF CONGRESS AVENUE TO WEST OF AUSTRALIAN AVENUE (PROJECT B), FDOT DISTRICT FOUR: SR 710 (Beeline Highway), a 2 miles re-construction project included widening of the existing 2-lanes roadway to a 4-lanes roadway along with turn lanes, driveway access, and roadway intersections improvements. The scope included turn lanes, new pavement, milling and resurfacing existing pavement, ADA upgrades, pedestrian signal updates, driveway access, replacement of damaged inlet tops, repair of drainage leaks if present, replacement of existing sidewalk and curb and gutter where needed.

NEW WORLD SYMPHONY, MIAMI-BEACH, FL: Served as project engineer for New World Symphony, an expansion campus expansion of by acclaimed architect Frank Gehry. The project located in Miami Beach. Responsibilities included alternate drainage design, pavement design, pump station design for stormwater, drainage plans and reports.

TWO MIDTOWN, MIAMI, FL: Served as project engineer for Two Midtown, an ambitious 29-story high-rise tower and mixed-use building located in the mega-infill development Midtown Miami, Two Midtown contains 338 residences and ground level retail Duties included project scheduling, work plan, cost estimation, Surface Water Management System Design using drainage well, Conceptual Drainage Calculations, ICPR Modeling, Drainage Report, SFWMD ERP Conceptual Permitting, SFWMD ERP Standard General permitting, Finish floor set up and permitted through building department, back of side walk set up, utility coordination, water & sanitary sewer system design and permitted through Miami Dade Water & Sewer Department (MDWASD), Fire Department, Department of Health and Department of Environment Resource management (DERM).

MARRIOTT AT MIAMI AIRPORT, MIAMI, FL: Served as project engineer for Marriott at Miami Airport, The property is a 15.33+/- acre site and is located at 1201 NW 42nd Avenue. This project fronts NW 42nd Avenue, and state road 836. The project contained 650 hotel rooms and necessary facilities with the room. Served as project engineer and Duties included project scheduling, work plan, cost estimation, task management, site plan preparation and permitting through zoning department, parking lot design (600+) and flexible pavement design, downstream and upstream sewer system analysis for receiving sewer pump station, water main design (2,000 LF +), Sewer system design with modified pump station, signage, striping and marking plan design, drainage system design using exfiltration trench (3,400 LF) and outfall structure, drainage pipe networking design and drainage report writing.

KROME AVENUE (SR 997) FROM KENDALL DRIVE (SW 88 STREET) TO TAMIAMI TRAIL (SW 8 STREET), MIAMI, FL: Served as project engineer (Drainage) and Duties included ditch design, cross drain analysis, exfiltration/ French drain design, drainage report writing, developing frictional head loss model, drainage model for entire roadway drainage system, wetland mitigation analysis and preparation of Bridge Hydraulics report.

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

Miami-Dade County Stormwater Master Plan Update, Miami, Florida

22. YEAR COMPLETED

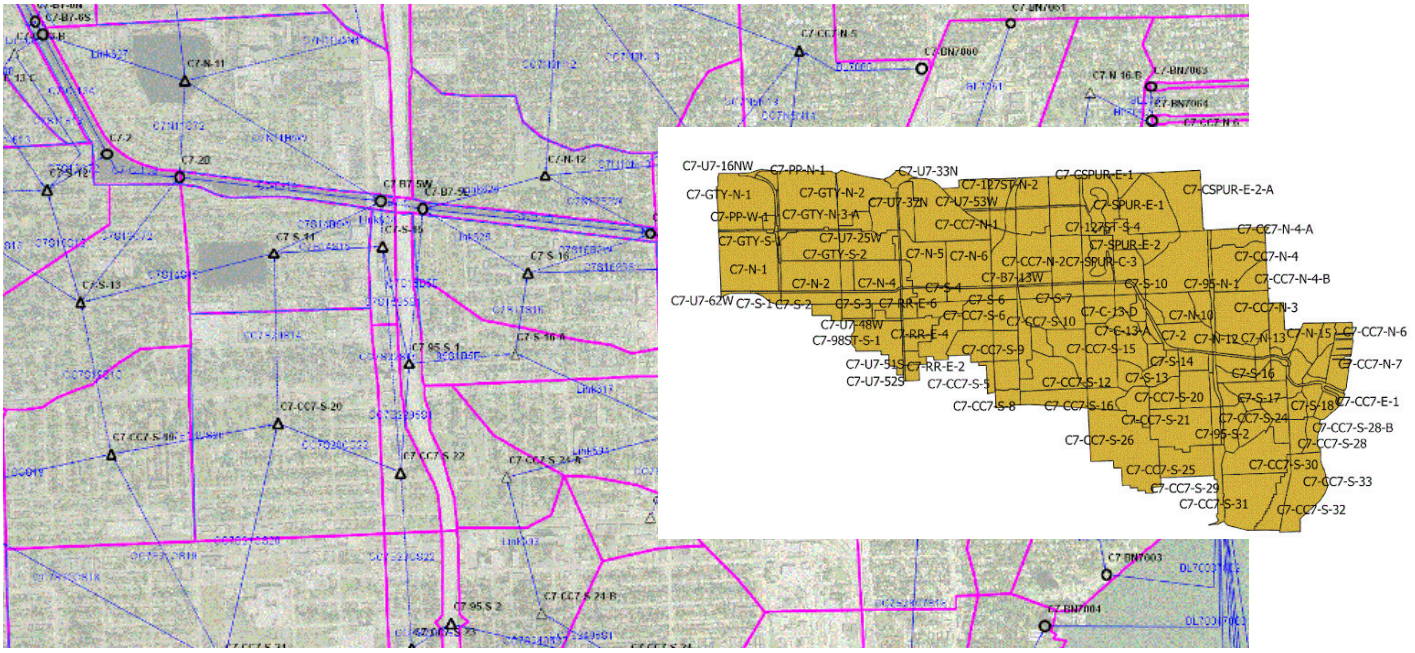
PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2019	**2020**

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Miami-Dade Water Control Section	**Elius Nortelus, P.E.**	**(305) 372-6684**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering worked on updating the Miami-Dade County Stormwater Master Plan Model created by XP-SWMM. The tasks involved updating drainage basin C-1, C-2, C-7 and C-100. Task included all culverts, canal cross sections, land use, updating ground water information. Validated the model through calibration with SFWMD DBHYDO data. Update the boundary conditions by considering future water elevation rise in the ocean. Produced flood map for different storm events for different future years. Produced mitigation plan to reduce flood effect in the future year.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	North Miami Beach, Florida	Stormwater Master Plan Update
b.			
c.			
d.			
e.			
f.			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

Water's Edge Park Improvement, City of Tamarac, Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2019	**2020**

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Tamarac	**Mustafa Albassam, P.E.**	**(954) 597-3705**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering had provided Civil Engineering Design services for the Water's Edge Park improvement. The scope included stormwater management system, water distribution system, wastewater collection system, roadway milling and resurfacing, school zone singing and markings, new sidewalk addition along with new drainage system. Prepared construction documents, calculations and reports, permitting documents, reviewed shop drawings, performed periodic site visit, response to RFIs, resolve field issues, provide engineering certification for completed work and submitted to respective agencies to put the services in operation.









25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	Lauderdale Lakes, Florida	Parking Lot, Water, Sewer, Roadway, Signing Marking and Drainage
b.			
c.			
d.			
e.			
f.			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

Flamingo Park, City of Sunrise, Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2017	**2018**

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Sunrise	**Earl Prizlee, P.E.**	**(954) 888-6002**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering had provided Civil Engineering Design services for the 22 acres of Flamingo Park located at the City of Sunrise, Florida. The project scope included construction of new community center, covered basketball courts, soccer field restoration, and new splash pad with all amenities, site utilities and drainage improvements throughout the park. SSN has worked as EOR for the Water Distribution System, Sewer Collection System, Stormwater Management System and had worked closely with the design architect and landscape architect to layout the site elements around the park. The services included design, applicable permits, and construction per local, County, State and other applicable standards, rules and laws. Prepared contract drawings, performed a detailed quantity takeoff, prepared General and Technical Specifications, prepared final opinion of probable cost, responded to RFIs, conducted site visit, and resolved field issues.











25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	Lauderdale Lakes, Florida	Parking Lot, Water, Sewer, and Drainage
b.			
c.			
d.			
e.			
f.			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

Sunrise Civic Center Improvement, City of Sunrise, Florida

22. YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2018	**2020**

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Sunrise	**Earl Prizlee, P.E.**	**(954) 888-6002**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering had provided Civil Engineering Design services for the Civic Center, Athletic Club & Gymnasium Addition, located at the City of Sunrise, Florida. The scope included construction of new community center, covered basketball courts, soccer field restoration, and new splash pad with all amenities, site utilities and drainage improvements throughout the park. The services included design, applicable permits and construction per local, County, State and other applicable standards, rules and laws. Prepared contract drawings, performed a detailed quantity takeoff, prepared General and Technical Specifications, prepared final opinion of probable cost, responded to RFIs, conducted periodic site visit, and resolved field issues.









25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	Lauderdale Lakes, Florida	Parking Lot, Water, and Drainage
b.			
c.			
d.			
e.			
f.			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

Administration Building Addition, City of Coconut Creek, Florida

22. YEAR COMPLETED

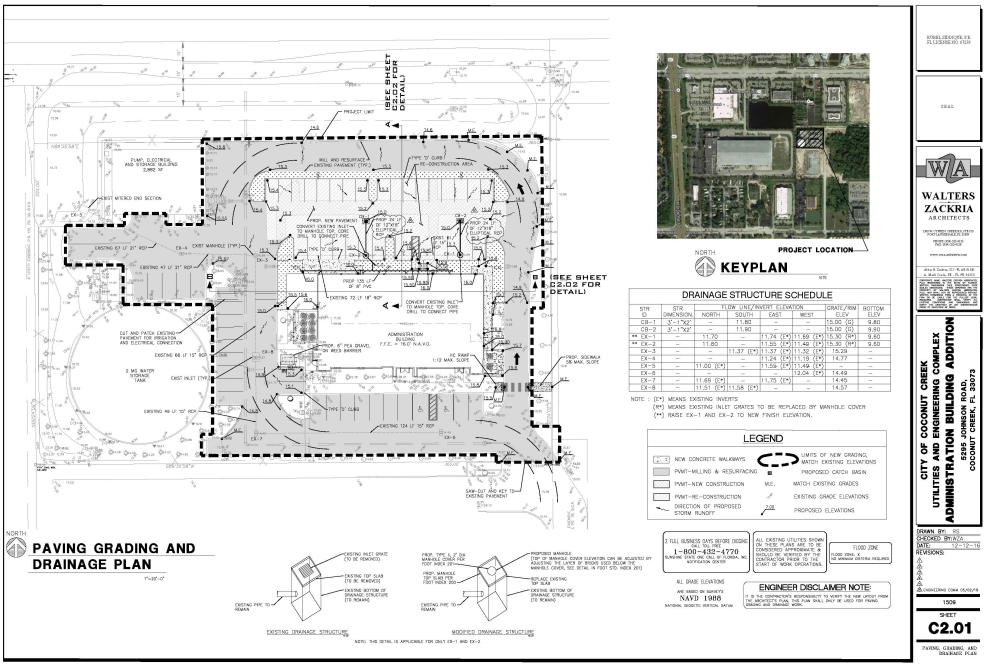
PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2016	**2018**

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Coconut Creek	**Abbas Zackria (Walters Zackria)**	**(954) 253-4166**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering staff had provided Civil Engineering design and permitting services for the addition of Administration building to the existing engineering building. Rubel Siddique was the EOR for the civil engineering services that included site grading, water, sewer, drainage, signing and pavement marking. Prepared construction plans, details, calculations, reviewed shop drawings, responded to RFIs, reviewed as-built, and certified the project for Certificate of Occupancy (CO).



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	Lauderdale Lakes, Florida	Parking Lot, Water, Sewer, and Drainage
b.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
c.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
d.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
e.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
f.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION *(City and State)*

MD-WASD Distribution Yard Parking Lot, Miami, Florida

22. YEAR COMPLETED

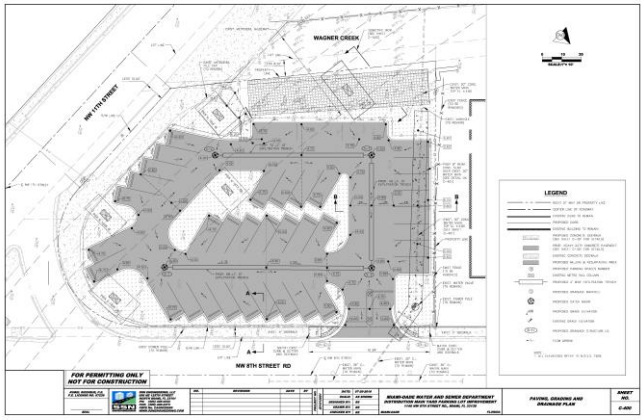
PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
2015	

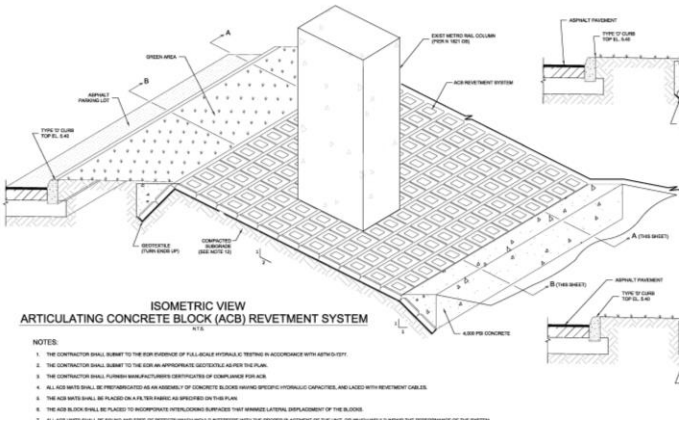
23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Miami-Dade Water & Sewer Dept.	**Rong Zhuge, Project Manager**	**(786) 268-5238**

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

SSN Engineering has provided professional Engineering Design services for the parking lot layout design, stormwater management system design, design of canal bank stabilization system, lighting system design, landscaping design, and permitting. Collected and reviewed all available information such as records, maps, aerials, surveys, easements, ROW records, zoning classifications, plans, record drawings, soil investigation reports, and standards that may be pertinent to execution of this project. Co-ordinated with Miami-Dade Transit for the design of retaining wall around the existing Metrorail columns/pile cap. Prepared site layout for the parking lot that complies with all applicable jurisdictional agency requirements. The paving, grading, and drainage plan was prepared with adequate design of grades, paving, gutters, drainage and treatment of turf to handle storm waters, prevent erosion and formation of dust. A lighting plan was created to show the proper arrangement of signs and lighting devices with respect to traffic control devices and adjacent uses. Produced Engineering plans and Calculations for the design of the parking lot that was in conformance with Local, State, and Federal regulations and/ or codes, which were prepared to a level suitable to submit with permit applications for agency review.





25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	SSN Engineering, LLC	Lauderdale Lakes, Florida	Parking Lot, Retaining Wall
b.			
c.			
d.			
e.			
f.			

TAB-6

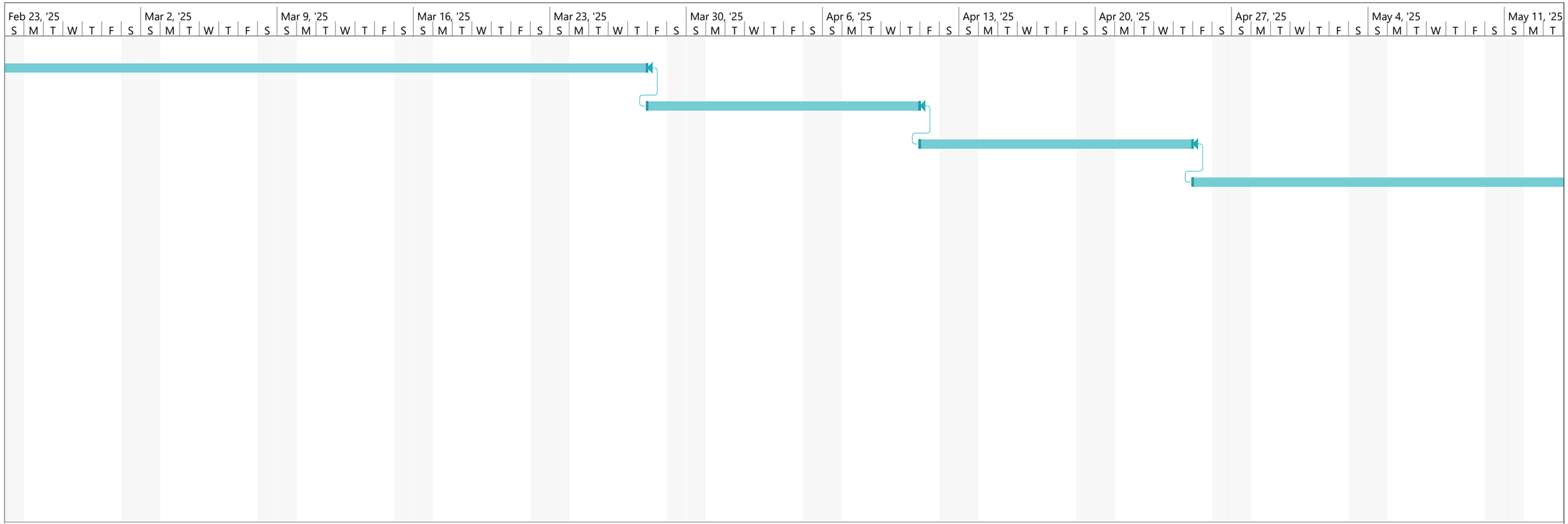
Schedule

ID	Task Mode	Task Name	Duration	Start
1		Notice to proceed	2 days	Wed 1/1/25
2		MDC property appraisal data Collection and analysis	60 days	Fri 1/3/25
3		City's water bill data Collection and analysis	10 days	Fri 3/28/25
4		City's Sewer bill data Collection and analysis	10 days	Fri 4/11/25
5		Rainfall data Collection and analysis	15 days	Fri 4/25/25
6		Update the existing model network with the current sewer	14 days	Fri 5/16/25
7		Update the existing model Pump station with the current PS	14 days	Thu 6/5/25
8		Update existing model input with the current data	7 days	Wed 6/25/25
9		Select a five-time range for five Models	8 days	Fri 7/4/25
10		Run calibration model and validate it	25 days	Fri 7/18/25
11		Run two dry seasonal models	7 days	Fri 8/22/25
12		Run three wet seasonal models	14 days	Thu 9/4/25
13		Collect the findings of models	14 days	Wed 9/24/25
14		Discuss with the City about the conclusions and	3 days	Tue 10/14/25
15		Submit the report to MDC	1 day	Fri 10/17/25



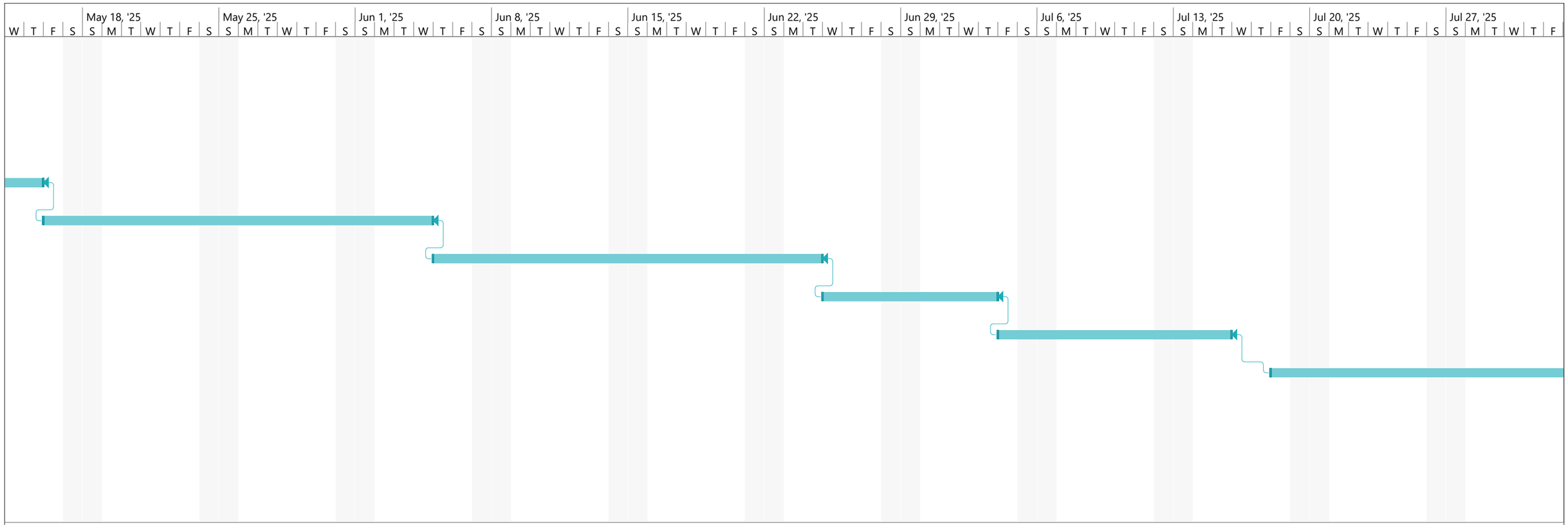
Project: Modeling Schadule
Date: Fri 10/11/24

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone



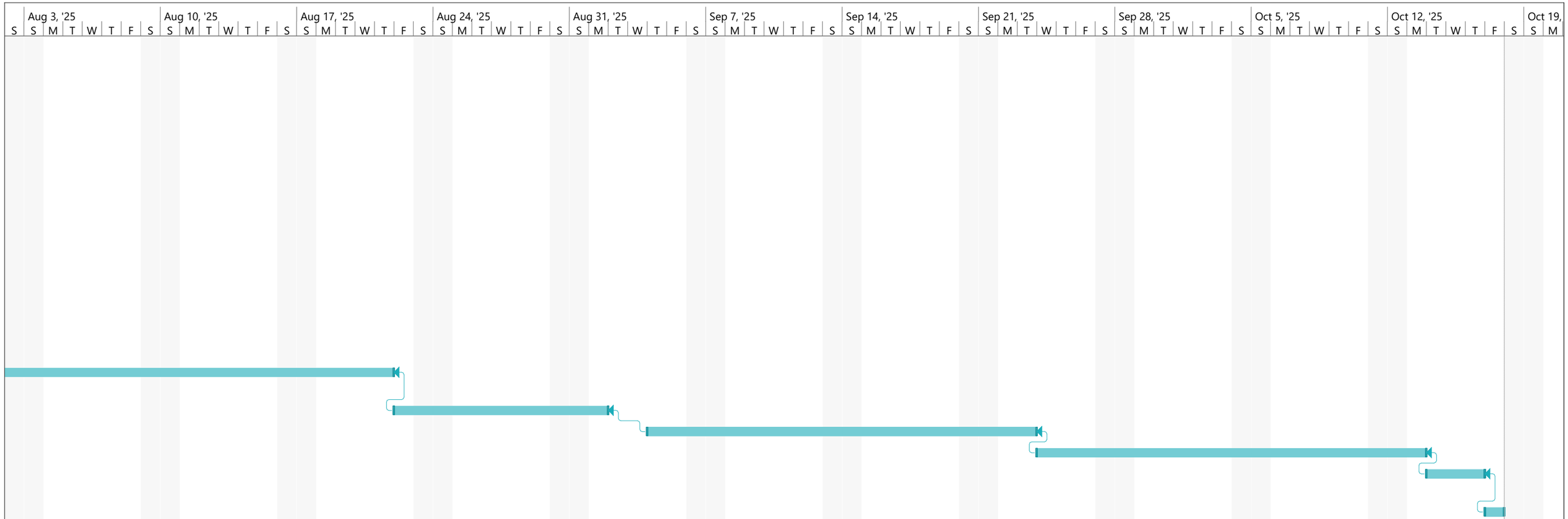
Project: Modeling Schadule
Date: Fri 10/11/24

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	



Project: Modeling Schadule
Date: Fri 10/11/24

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	



Project: Modeling Schadule
Date: Fri 10/11/24

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

TAB-7

References

REFERENCES

Elius Nortelus, PE

Project Manager
Department of Regulatory and Economic Resources
Division of Environmental Resources Management – Water Management Division
701 NW 1st Court, 5th Floor, Miami, FL 33136
Email: Elius.nortelus@miamidade.gov
Tel: (305) 372-6684
Contract Date: 2019-2020

Description: Assisting Miami-Dade County Water Control Section in updating the stormwater master plan for the entire Miami-Dade County. This master plan is a compilation of the many related studies, engineering reports, previous master plans and other relevant data. SSN Engineering has worked to provide solutions to existing problems and inadequate storm sewer systems including collection, conveyance, treatment, and detention facilities. Analysis and evaluation of the existing system under existing and future development conditions. The services include collecting and reviewing as-built data, field verifying as-built conditions, updating the stormwater atlas, updating the existing modeling scenario, re-establishing the future modeling scenarios, updating the master plan document, and support tasks related to the completion of the XP SWMM Model.

Damaris Williams, PE

Project Manager, FDOT District 4
3400 W Commercial Blvd, Fort Lauderdale, FL 33309
Email: Damaris.williams@dot.state.fl
Tel: (954) 777-4091 (Work)
Contract Date: 2016-2018

Description: State Road 710/ SW Warfield Blvd from FPL Martin Power Plant Access Road to CR 609/SW Allapattah Road, is a two-lane undivided rural principal arterial in Martin County See Project location Map- Exhibit 1) and is proposed to be reconstructed to a four-lane divided rural principal arterial. The proposed project is under the jurisdiction of the Florida Department of Transportation (FDOT) District IV and South Florida Water Management District (SFWMD). The total project area is approximately 164 acres (road right-of-way) and total basin area is approximately 124.58 acres (excluding interceptor ditch area). The project area has been divided into thirty-one (31) drainage basins. The proposed typical section consists of a four-lane rural divided section with a 48-foot median, two 12-foot travel lanes, 12 foot outside shoulder (5 foot paved), 8-foot median shoulders (2 foot paved), 35-foot-wide dry retention linear swale with 1:6 front slope, 1:4 back slope and 3-foot-wide flat bottom for each bound. Along the south side, at the FDOT/CSX right-of-way, a 2-foot-wide berm with 1:4 and 1:3 slopes are provided to separate the on-site runoff from the off-site runoff. Also, along the north bound, behind the swale, a 19-foot-wide berm, to accommodate a 12-foot shared use path, and an interceptor ditch that replaces the existing ditch in-kind along the north side of SR 710.

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Paula A. Fonseca, PE

City of Margate
Department of Environmental and Engineering Services (DEES)
901 NW 66th Avenue, Ste A, Margate, FL 33063
Email: pfonseca@margatefl.com
Tel: (954) 972-0828 (Work)
Contract Date: 2023-2024

Description: SSN Engineering assisted the City of Margate to analyze the stormwater system due to the addition of an additional parking lot in the Department of Environmental and Engineering Services building. Our staff have coordinated with the city project manager to obtain existing permit data, as-built, surveys, Geotech reports, and other data required to complete the project design. We had met with the Broward County Drainage District to discuss the design approach and constraints. Helped the city to secure the permit for the new parking lot.

Dibb Machuca

Acting Capital Project Manager, City of Tamarac
Public Services Department
6011 Nob Hill Road, Tamarac, FL 33321
Email: Dibb.Machuca@tamarac.org
Tel: (954) 597-3725
Contract Date: 2019-2020

Description: SSN Engineering had provided Civil Engineering Design services for the Water's Edge Park improvement. The scope included stormwater management system, water distribution system, wastewater collection system, roadway milling and resurfacing, school zone singing and markings, new sidewalk addition along with new drainage system. Prepared construction documents, calculations and reports, permitting documents, reviewed shop drawings, performed periodic site visit, response to RFIs, resolve field issues, provide engineering certification for completed work and submitted to respective agencies to put the services in operation.

Earl Prizlee

Project Manager, City of Sunrise
777 Sawgrass Corporate Parkway, Sunrise, FL 33325
Email: eprizlee@sunrisefl.gov
Tel: (954) 888-6002 (Work)
Contract Date: 2016 - 2018

Description: SSN Engineering has provided Civil Engineering Design services for the 22 acres of Flamingo Park located at the City of Sunrise, Florida. The project scope included construction of a new community center, covered basketball courts, soccer field restoration, and new splash pad with all amenities, site utilities and drainage improvements throughout the park. SSN has worked as EOR for the Water Distribution System, Sewer Collection System, Stormwater Management System and had worked closely with the design architect and landscape architect to layout the site elements around the park. The services included design, applicable permits, and construction per local, County, State and other applicable standards, rules and laws. Prepared contract drawings performed a detailed quantity takeoff, prepared General and Technical Specifications, prepared final opinion of probable cost, responded to RFIs, conducted periodic site visit, and resolved field issues.

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TAB-8

Additional Form

PROPOSER QUALIFICATIONS

The Proposer MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: SSN Engineering, LLC

   Address: 12550 Biscayne Blvd, Suite 800-34

   City, State, Zip: North Miami, FL 33181 Phone/Fax: (954) 944-3272

2. Check One: Corporation (X) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: 08/01/2011 State in which Incorporated: Florida

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization: Not applicable

5. **Name and Title of Principal Officers** **Date Elected:**

Rubel Siddique, PE	08/01/2011
MD Shahinur Rahman, PE	12/28/2015

6. The length of time in business: 13 years

7. The length of time (continuous) in business as a service organization in Florida:
   13 years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka RFP during the last twenty-four months.
9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

TAMARAC
The City For Your Life

John E. Doherty, P.E.
Director of Public Services

FORM 9 - REFERENCES

IN ADDITION TO THE INFORMATION REQUIRED ON THIS FORM, PLEASE PROVIDE A MINIMUM OF THREE REFERENCE LETTERS, ONE OF WHICH SHOULD BE MUNICIPAL OR GOVERNMENT REFERENCES.

REFERENCE #1

Public Entity Name: City of Tamarac

Reference Contact Person/Title/Department: Dibb Machuca, Acting Capital Projects Manager

Contact Number & Email: (954) 597-3725 Dibb.Machuca@tamarac.org

Public Entity Size/Number of Residents/Square Mileage: 12.08 Square Miles

Event(s) Completed (include Name of Project/Event, Date of Event Start/Completion, Details on Size/Scope of Work/Complexity) Design-Build of Water's Edge Park Improvement (2019 - 2020). Design of Stormwater management system, water distribution system, wastewater collection system, roadway improvements, signing and marking, sidewalk, and parking lot. Provided permitting and certification services. Work was part of the Design Build of Waters Edge Park Project.

Is the Contract still Active? Yes_____ No X

Sincerely,

Dibb Machuca

MIAMI-DADE COUNTY
miamidade.gov

Water and Sewer
PO Box 330316 • 3071 SW 38 Avenue
Miami, Florida 33233-0316
T 305-665-7471

REFERENCE LETTER

Date: August 25, 2016

TO WHOM IT MAY CONCERN

Please allow this letter to serve as testimony that Miami-Dade Water and Sewer Department had the positive experience of working with SSN Engineering, LLC on a project identified as NW 11 Street Distribution Yard Parking Lot in the City of Miami. SSN Engineering was the Engineer of Record for this project, and throughout the duration of the project they demonstrated a high level of professionalism in the way they handled all matters and prompt responsiveness to all our inquiries. We would definitely seek the services of this Engineering Company in the future and would highly recommend them to anyone.

I am happy to recommend the services of SSN Engineering. If you have any questions, feel free to contact me.

Sincerely,

Rong Zhuge P.E.
Engineering and Design Division
Miami-Dade Water and Sewer Department
3575 South LeJeune Road, Miami, Florida 33146
Phone: 786-268-5238

Lake Worth, Florida. The Art of Florida Living.sm

WATER UTILITIES DEPARTMENT

301 College Street
Lake Worth, FL 33460
561.586.1710

May 20, 2016

TO WHOM IT MAY CONCERN

This letter is in reference to the working relationship I have had with SSN Engineering, LLC. I had the opportunity to work with Rubel Siddique, P.E. on numerous water and wastewater projects in Palm Beach County and elsewhere. The company offers quality services and I have always been satisfied by their work.

One of the projects that we worked on recently was the Sanitary Sewer Pump Station No. 7 upgrade in the City of Opa-locka, Miami-Dade County, Florida. SSN Engineering was the prime firm to provide the evaluation, design, permitting, and construction services.

Based on my experience with this company I can recommend their services. I look forward to the opportunity to work with SSN Engineering, LLC again.

Sincerely,

Brian A. Shields, P.E.
Director, Water Utilities

MARLIN

July 20, 2023

To Whom It May Concern:

Please allow this letter to serve as a testimony that Marlin Engineering had the positive experience of working with SSN Engineering, LLC on a project Identified as SR 710/Beeline Highway performed for the Florida Department of Transportation (FDOT D4).

Throughout the duration of the project, they demonstrated a high level of professionalism in the way they handled all matters and prompt responsiveness to all our inquiries.
We would definitely seek the services of this Engineering Company in the future and would highly recommend them.

If you need to further discuss SSN Engineering, LLC's qualifications, please don't hesitate to call us at (954) 870-5070.

Sincerely,

Betsy Jeffers, PE
Sr. Vice President
Marlin Engineering, Inc.
O 954.870.5070 | **C** 954.809.4058
bjeffers@marlinengineering.com

CERTIFICATION REGARDING DEBARMENT, SUSPENSION
PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature Rubel Siddique

Printed Name Rubel Siddique, PE

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by Rubel Siddique, PE
(Name)

the Director of Engineering (Title/Position) of SSN Engineering, LLC (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

10/10/2024
Date

Rubel Siddique
Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the Rubel Siddique, PE (Owner, Partner, Officer, Representative or Agent) of SSN Engineering, LLC the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

Witness

Witness

By: Rubel Siddique
Signature

Rubel Siddique
Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By: Rubel Siddique, P.E.

Title: Director of Engineering

Sworn and subscribed before this

10th day of_, 20 24

Notary Public, State of Florida

MD Shahinur Rahman

(Printed Name)

My commission expires: 12/07/2026

Notary Public State of Florida
MD Shahinur Rahman
My Commission HH 339260
Expires 12/7/2026

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: SSN Engineering, LLC

Authorized Signature: Rubel Siddique

Print Name: Rubel Siddique, P.E.

Title: Director of Engineering

Date: 10/10/2024

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and SSN Engineering, LLC or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: Rubel Siddique, P.E.

Title: Director of Engineering

Sworn and subscribed before me this

10th day of October, 2024

MD Shahinur Rahman, PE
Notary Public
State of Florida at Large

Notary Public State of Florida
MD Shahinur Rahman
My Commission HH 339280
Expires 12/7/2026

My commission expires: 12/07/2026

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/11/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Rick Hansen	
Hansen Insurance, LLC 4590 N. Meridian Avenue Miami Beach, FL 33140 License #:A307619	PHONE (A/C, No, Ext): (305) 674-9998	FAX (A/C, No): (305) 674-9998
	E-MAIL ADDRESS: rick@hanseninsurancefl.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Liberty Insurance Underwriters	19917
INSURED SSN Engineering, LLC 12550 Biscayne Blvd, Suite 800-34 North Miami, FL 33181 (561) 951-3864 FL 33181	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A						E.L. EACH ACCIDENT	$
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Professional Liability			AEXNYAB337W004	10/24/2024	10/24/2025	each claim annl. aggr.	1000000 2000000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Professional Liability insurance is written on a claims-made and reported basis.

CERTIFICATE HOLDER

City of Opa-locka
780 Fisherman Street
Opa Locka, FL 33054

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Rick Hansen

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Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

SSN Engineering, LLC

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

5518 Mainship Dr

Requester's name and address (optional)

6 City, state, and ZIP code

Greenacres, FL 33463

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

4	5	–	2	8	7	5	8	6	7

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person ▶** Rubel Siddique **Date ▶** 10/10/2024

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/11/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Rick Hansen	
Hansen Insurance, LLC 4590 N. Meridian Avenue Miami Beach, FL 33140 License #:A307619	PHONE (A/C, No, Ext): (305) 674-9998	FAX (A/C, No): (305) 674-9998
	E-MAIL ADDRESS: rick@hanseninsurancefl.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Liberty Insurance Underwriters	19917
INSURED SSN Engineering, LLC 12550 Biscayne Blvd, Suite 800-34 North Miami, FL 33181 (561) 951-3864 FL 33181	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A						E.L. EACH ACCIDENT	$
	(Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$
A	Professional Liability			AEXNYAB337W004	10/24/2024	10/24/2025	each claim annl. aggr.	1000000 2000000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Professional Liability insurance is written on a claims-made and reported basis.

CERTIFICATE HOLDER

City of Opa-locka
780 Fisherman Street
Opa Locka, FL 33054

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Rick Hansen

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CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by Rubel Siddique, PE
(Name)

the Director of Engineering (Title/Position) of SSN Engineering, LLC (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

10/10/2024
Date

Rubel Siddique
Signature

State of Florida
Department of State

I certify from the records of this office that SSN ENGINEERING, LLC is a limited liability company organized under the laws of the State of Florida, filed on August 1, 2011, effective July 31, 2011.

The document number of this limited liability company is L11000087864.

I further certify that said limited liability company has paid all fees due this office through December 31, 2024, that its most recent annual report was filed on January 31, 2024, and that its status is active.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-second day of July, 2024



Secretary of State

Tracking Number: 2622323186CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

State of Florida

Florida Board of Professional Engineers

Attests that

SSN Engineering LLC

Has satisfied the requirements of Section 471,023, Florida Statutes. In recognition thereof, the Board of Professional Engineers hereby authorizes this firm to offer engineering services in the State of Florida in accordance with Chapter 471, Florida Statutes, and the rules of the Board.

Witness the Seal of the Board and the Signature
of the Board's duly authorized Chair
this 6 day of OCT, 2011

Certificate of
Authorization No. **29695**

John C. Burke
Chair

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

SIDDIQUE, RUBEL

5518 MAINSHIP DR.
GREENACRES FL 33463

LICENSE NUMBER: PE67239

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

RAHMAN, MD SHAHINUR

11186 SW 17T MNR
DAVIE FL 33324

LICENSE NUMBER: PE80669

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Local Business Tax Receipt

Miami–Dade County, State of Florida

–THIS IS NOT A BILL – DO NOT PAY

LBT

7167802

RECEIPT NO.
RENEWAL
7446371

EXPIRES
SEPTEMBER 30, 2025

Must be displayed at place of business
Pursuant to County Code
Chapter 8A – Art. 9 & 10

BUSINESS NAME/LOCATION
SSN ENGINEERING LLC
12550 BISCAYNE BLVD # 800-34
NORTH MIAMI, FL 33181-2541

OWNER
SSN ENGINEERING LLC
C/O MD SHAHINUR RAHMAN MGR

Employee(s) 1

SEC. | **TYPE OF BUSINESS**
212 | P.A./CORP/PARTNERSHIP/FIRM

PAYMENT RECEIVED BY TAX COLLECTOR
45.00 07/15/2024
INT-24-429913

This Local Business Tax Receipt only confirms payment of the Local Business Tax. The Receipt is not a license, permit, or a certification of the holder's qualifications, to do business. Holder must comply with any governmental or nongovernmental regulatory laws and requirements which apply to the business.

The RECEIPT NO. above must be displayed on all commercial vehicles – Miami–Dade Code Sec 8a–276.

For more information, visit www.miamidade.gov/taxcollector

MIAMI-DADE COUNTY

Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

SSN Engineering, LLC

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

5518 Mainship Dr

Requester's name and address (optional)

6 City, state, and ZIP code

Greenacres, FL 33463

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

4	5	–	2	8	7	5	8	6	7

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person ▶** Rubel Siddique **Date ▶** 10/10/2024

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the Rubel Siddique, PE (Owner, Partner, Officer, Representative or Agent) of SSN Engineering, LLC the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

Witness

Witness

By: Rubel Siddique
Signature

Rubel Siddique
Print Name and Title

(954) 944-3272
(561) 951-3864
www.ssnengineering.com
rsiddique@ssnengineering.com

October 11, 2024

Joanna Flores
Office of the City Clerk
The City of Opa-locka
780 Fisherman Street, 4th Floor.
Opa-locka, FL 33054

RE: SWORN STATEMENT ON PUBLIC ENTITY CRIMES

Dear Members of the Evaluation Committee:

Please accept this letter of statement regarding the Public Entity Crimes, since the RFQ document was missing this form.

Neither the entity submitting this sworn statement nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

Sincerely,

Rubel Siddique

Rubel Siddique, P.E.
Project Manager
SSN ENGINEERING, LLC

CITY OF OPA-LOCKA
CERTIFICATION

REQUEST FOR QUALIFICATIONS
RFQ NO. 24-1011200

Sanitary Sewer Collection System Hydraulic Modeling

I, Joanna Flores, City Clerk of the City of Opa-locka, Florida, do hereby certify that sealed proposals were received and opened at the Opa-locka Municipal Complex, 780 Fisherman Street, 4th Floor, Opa-locka, Florida, at 2:20 p.m. this 11th day of October, 2024.

PROPOSAL(S) RECEIVED

NAME/ADDRESS

1. **SSN Engineering, LLC**
   12550 Biscayne Boulevard, Suite 800-34
   North Miami, FL 33182
   Contact: Rubel Siddique, PE
   Tel: 561.951.3864
   Email: rsiddique@ssnengineering.com

Please note that the proposal from SSN Engineering, LLC was submitted via DemandStar (e-bid) and provided to the City Clerk's Office by Junior Bergel, City of Opa-locka Procurement Office since the Office of the City Clerk does not have access to DemandStar.

I further certify that proposal(s) were submitted and properly opened in the presence of the following:

Junior Bergel
Procurement Officer
City of Opa-locka

Joanna Flores, CMC
City Clerk
City of Opa-locka

z

CITY OF OPA-LOCKA

RFQ 24-1011200

REQUEST FOR QUALIFICATIONS
SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING

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ANTI-KICKBACK AFFIDAVIT

Advertisement
RFQ 24-1011200
SANITARY SEWER COLLECTION
SYSTEM HYDRAULIC MODELING

Sealed Proposals for Sanitary Sewer Collection System Hydraulic Modeling will be received by the City of Opa-locka at the Office of the City Clerk, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, **Friday, October 11, 2024, by 2:00 p.m. (ET)**. Any RFQ Package received after the designated closing time will be returned unopened. The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked RFQ for Sanitary Sewer Collection System Hydraulic Modeling. This requirement is waived when submitting via www.demandstar.com.

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that Proposer whose proposal best complies with the **RFQ NO: 24-1011200** requirements. Proposers may not withdraw their proposal for a period of ninety (90) days from the date set for the opening thereof.

City Clerk
Joanna Flores, CMC

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka is requesting proposals from qualified professional consultants to provide Sanitary Sewer Collection System Hydraulic Modeling services.

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 pm (ET) on 10/11/2024. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: RFQ NO. 24-1011200 – Sanitary Sewer Collection System Hydraulic Modeling. This package shall also include the Proposer's return address.

The City cautions Proposers to ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611, Option 1, before the proposal closing time. Any proposal received after the established deadline will not be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an original and six (6) copies (a total of 7) plus one copy on USB Flash Drive in PDF format of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail, or any other mode of delivery. This requirement is waived when submitting via www.demandstar.com.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the RFQ.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the RFQ, until eight (8) days prior to the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the RFQ so that they may read and interpret such for themselves. No employee other than the City's Purchasing Officer is authorized to interpret any portion of this RFQ or give information as to the requirements of the RFQ in addition to what is contained in the written RFQ document.

1-6. Addenda: The City may record its response to inquiries and any supplemental instructions in the form of written addenda. The City may post addenda on the City's website and www.demandstart.com up to five (5) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the RFQ opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Purchasing Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this RFQ does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed, evaluated by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties.

The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re-advertise for other proposals.

1-8. Contractual Agreement: This RFQ and Contractor proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. Any and all legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible.

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke the exemptions to disclosure provided by law in the response to the RFQ and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this RFQ or the service, study, or project to which it relates.

1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions specified herein. In the event the Proposer is a governmental entity or self-insured organization, different insurance requirements may apply. Misrepresentation

of any material fact, whether intentional or not, regarding the Proposer's insurance coverage, policies or capabilities may be grounds for rejection of the proposal and rescission of any ensuing Agreement.

1. Evidence of General Liability coverage with limits not less than $1,000,000 per Occurrence/ $2,000,000 Aggregate (Including Policy Number and Policy Period);

2. Evidence of Auto Liability coverage with limits not less than $1,000,000 per Occurrence/$1,000,000 Aggregate (Including Policy Number and Policy Period);

3. Evidence of Workers' Compensation coverage with statutory limits and Employer's Liability coverage with limits not less than $100,000 (Including Policy Number and Policy Period);

4. The City listed as an additional insured (this may be specifically limited to the specific job(s) the contractor will be performing);

5. Minimum 30-day written notice of cancellation.

1-13. Licenses: Proposers, both corporate and individual, must be fully licensed and certified in the State of Florida at the time of RFQ submittal. The proposal of any Proposer who is not fully licensed and certified shall be rejected.

1-14. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. No public entity shall award any contract to, or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the RFQ proposal forms, Proposer attests that they have not been placed on the "Convicted Vendor List".

1-15. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka, Miami-Dade County or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and be further disqualified from submitting any future proposals for work, goods, or services for the City of Opa-locka.

1-16. Drug-Free Workplace: Preference shall be given to businesses with Drug-Free Workplace (DFW) programs. Whenever two or more proposals which are equal with respect to price, quality, and service are received by the City for the procurement of commodities or contractual services, a proposal received from a business that completes the attached DFW form certifying that it is a DFW shall be given preference in the award process.

1-17. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

1-18. Protests: Protests of the plans, specifications, and other requirements of the Request for Qualifications must be received in writing by the City Clerk's Office at least ten (10) working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-19. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances. A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (RFP), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**
Release Date	9/9/2024
Pre-Bid	TBA
Written Questions Due	9/24/2024 @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "RFQ No: Bid Questions"
Response to Questions	10/01/2024 @ 5:00pm (ET)
Due Date/Bid Opening	10/11/2024 @ 2:00 pm (ET)
Evaluation Committee Meeting	TBA
Award Recommendation	TBA
Commission Approval	TBA
Post Award	TBA

PART II

NATURE OF SERVICES REQUIRED

2-1 PURPOSE AND SCOPE OF WORK

PROJECT UNDERSTANDING

The City of Opa-locka seeks professional services to prepare a comprehensive Sanitary Sewer Collection System Hydraulic Modeling update for the entire sewer system network within the City's Sewer Service Area.

The object of the update:

I. Assist in the development and implementation of operational and maintenance procedures to optimize transmission capacity within the collection system,
II. Evaluate the impact of infiltration and inflow rehabilitation programs, proposed system modifications, upgrades, and expansions to the transmission capacity and performance of the collection system.

SCOPE OF SERVICES

The following task will be performed to update the model:

1. Visit all properties in the City of Opa-locka's sewer service area potentially connected to the City's sewer service as identified from the Miami-Dade County Property Appraisal or information and other sources. Establish a new sewer estimated flow from the occupant of each property.
2. Collect sewer flow data from Miami-Dade County. Collect concurrent water bill data from the City of Opa-locka. Collect concurrent rainfall data from South Florida Water Management District (SFWMD) and the City of Opal-locka.
3. Insert the data from task-1 and task-2 into the Calibration Model and validate the Calibration Model by adjusting the variables.
4. Establish two (2) dry flow models and three (3) wet flow models.
5. Perform the relative analysis from the dry and wet flow models from task 4.
6. Update the report with new data, models, analysis, and recommendations.

PROJECT APPROACH

The firm will manage the assigned projects and tasks, carefully control costs and resources, and complete the project work on schedule. The Professional Engineer of Record will be the project manager who will act as the City's primary contact and will be responsible for the work (including sub-consultant work if applicable). To ensure the project remains on schedule, the following project management activities will be performed:

MEETING WITH CITY STAFF

- Review the scope of services with City staff and review relevant studies including, but not

limited to, the existing/proposed sanitary sewer master plan and the City's Comprehensive Plan.
- Meet with City staff to collect information that is vital for this project.
- Evaluate the existing sewer collection system to determine areas of deficiency.

SEWER HYDRAULIC MODELING

- The Firm will use XP-SWMM to update the existing Model. Miami-Dade County except for the model platform in XP- SWMM or InfoWorks.
- Using flow data collected from the City data and field investigations, the firm will update the existing calibration hydraulic flow model of the City's sewer collection system.
- Will identify the seasonal or daily variation of the flow.

DELIVERABLES

- The Firm will prepare an updated comprehensive written report describing the work performed, findings, and recommendations to the City of Opa-locka and Miami-Dade County.

2-2 PROPOSER QUALIFICATIONS

Adequate information and documentation must be provided in the Proposal to support or confirm satisfaction of the required qualifications below:

- The Proposer shall have extensive experience, expertise, and reliability in providing Sewer Modeling services; Proposer must have a minimum of five (5) years of consecutive and successful experience in the aforementioned area.
- The Project Manager shall have a minimum of five (5) year experience in Sewer Modeling.

PART III

PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this RFQ.

3-2 SUBMISSION OF PROPOSALS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents

Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal 3.2.3.1 Limit to no more than two pages.

3.2.3.2 Briefly state the Proposers understanding of the work to be done

3.2.3.3 Give the names of the people authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3.2.3.4 Provide an official signature of a Corporate Officer certifying the contents of the Proposer's responses to the City's Request for Qualifications.

3.2.4 Tab 3 - General Information

3.2.4.1 Name of Business.

3.2.4.2 Mailing Address and Phone Number.

3.2.4.3 Names and contact information of persons to be contacted for information or services if different from name of person in charge.

3.2.4.4 Normal business hours.

3.2.4.5 State if business is local, national, or international and indicate the business legal status (corporation, partnership, etc.).

3.2.4.6 Give the location of the office from which the work is to be done and the number of professional staff employees at that office.

3.2.4.7 State if the business is licensed, permitted and/or certified to do business in the State of Florida and attach copies of all such licenses issued to the business entity.

3.2.5 Tab 4 – Project Approach

Describe in detail the proposal outlining how your services will meet the needs of the City of Opa-Locka, fully addressing the Purpose and Scope of Work, Section 2-1. The detailed plan should be specific in outlining the different types of services that your firm offers.

3.2.6 Tab 5 – Experience and Qualifications

3.2.6.1 Specify the number of years the Proposer has been in business.

3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this RFQ as listed in section 2-2 of the Scope of Services.

3.2.6.3 Identify the specific individual who would serve the City on a day-to-day basis as a primary point of contact and be responsible for the service of the Proposer.

3.2.7 Tab 6 – Schedule

3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Project.

3.2.7.2 Indicate the earliest available start date for your project team.

3.2.8 Tab 8 – References

3.2.8.1 List of a minimum of at least five organizations, preferably governmental agencies, for which Sewer Modeling Services have been provided in the past five years. Include the name

of the organization, a description of the services, the length of the engagement, and name of contact person, including telephone number and email address.

3.2.9 Tab 9 – Additional Forms

Proposers must compete and submit as part of its Proposal all of the following forms and/or documents

- Proposer Qualifications
- Certification regarding debarment and suspension
- Drug Free workplace certification
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verify Form

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY PROPOSER.

PART IV

EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee will convene, review, and ultimately rank all proposals submitted.

The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the RFQ including a detailed explanation of how the services shall be performed. Proposers will be notified of the date and time of the Selection Committee meeting and will be provided a link to observe the meeting and be available to respond to Committee questions.

4-2 EVALUATION CRITERIA

Category	Points
Qualifications of professional personnel assigned to project 1. Qualifications of assigned staff	40
Experience and success in providing Sewer Modeling services to companies and governmental agencies 1. Evaluation of Reference Information – Tab 8 – Section 3.2.9.1.	30
Resources and approach 1. Proposed plan and approach to fulfilling scope	30
TOTAL	100

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee in order to clarify their proposals. Only those firms with the highest rated scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted, without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentations in the evaluation phase. References and site visits (if needed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this RFQ, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated agreement. The City's decisions will be final. Following the notification of the selected firm, it is expected that an Agreement will be executed between both parties. City staff will recommend award to the responsible Proposer whose proposal is determined to provide overall best value to the City, considering the evaluation factors in this RFQ.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for his approval and submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

The Proposer MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. **Name and Title of Principal Officers** **Date Elected:**

   _____ _____
   _____ _____
   _____ _____
   _____ _____

6. The length of time in business:_____years

7. The length of time (continuous) in business as a service organization in Florida:
   _____years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka RFP during the last twenty-four months.
9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by_____
(Name)
the _____ of_____
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

_____ _____
Date Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the (Owner, Partner, Officer, Representative or Agent) of the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20____

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and
_ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large

My commission expires:

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

Criterion	Weight Points	Description
Qualifications	40.00	Qualifications of professional personnel assigned to project 1. Qualifications of assigned staff
Experience	30.00	Experience and success in providing Sewer Modeling services to companies and governmental agencies
Resources and Approach	30.00	Resources and approach

Total **100.00**

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: _____ **Date:** _____

Signature: _____

Firm Name: SSN Engineering

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Firm Name: _____

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Firm Name: _____

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

EVALUATION MATRIX

RFQ NO: 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

---

Firm Name: SSN Engineering

Evaluation

Criterion	Reviewer Name: / Weight Points	Airia Austin		Carlos Gonzalez		Owen Carney					
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Qualifications	40	38	38.00	40	40.00	40	40.00		0.00		0.00
Experience	30	25	25.00	30	30.00	30	30.00		0.00		0.00
Resources and Approach	30	28	28.00	27	27.00	30	30.00		0.00		0.00
			0.00		0.00		0.00		0.00		0.00
Total	**100.00**		**91.00**		**97.00**		**100.00**		**0.00**		**0.00**

FIRM SELECTED

Reviewer:

	SSN Engineering				
Airia Austin	91.00	0.00	0.00	0.00	0.00
Carlos Gonzalez	97.00	0.00	0.00	0.00	0.00
Owen Carney	100.00	0.00	0.00	0.00	0.00
0					
0					
AVERAGE RATING	**96.00**	**0.00**	**0.00**	**0.00**	**0.00**

CITY OF OPA-LOCKA

RFP NO: 24-1011200

Oct 16, 2024 @ 2:00 P.M.

Evaluation MEETING, 780 FISHERMAN STREET, 4th floor, OPA-LOCKA, FL 33054

NAME	COMPANY NAME	EMAIL	PHONE #
CARLOS GONZALEZ	City of Opa-locka	cgonzalez@opalockafl.gov	305.953.2868
AZIZA AUSTIN	CITY OF OPA-LOCKA	AAUSTIN@OPALOCKAFL.GOV	305-953-2828
Owen Carey	PWD	OCarney@opalockafl.gov	(305) 953-2828

Evaluation Meeting Script

Steps of Organizing an Evaluation Meeting:

1. Send an email to the members detailing the rules of the meeting.
2. Schedule Meetings via Zoom or Teams, confirming the availability of the members
3. Share the link with RFP respondents. (All the respondents to the bid or shortlist candidates).

Evaluation Committee Script for Meeting Lead/Organizer:

Good Day, Welcome, and thank you for participating in the City of Opa-locka Committee Evaluation meeting **for RFP NO: 24-1011200 SANITARY SEWER COLLECTION SYSTEM HYDRAULIC MODELING**

Today's Date: Tuesday, October 16, 2024

This meeting is being recorded and is open to the public (Inform participants)

My Name is Jay Bergel Procurement Officer for the City

THE MEETING OBJECTIVE: Committee members will evaluate submitted proposals for this RFP. The committee members may ask the bidding firm questions. The bidding firm may only answer questions posed by the committee. No comments are allowed, and guests are not allowed to dictate the scoring outcome of the committee.

The meeting will go as followed: The firms will be asked questions in the order of the meeting agenda that was shared previously.

At this time, I invite all City personnel, consultants, and committee members to introduce themselves for the record.

Now, I'll allow you to introduce yourself. Please state your name, company, and title when called.

With that being said, committee members will begin your evaluation.

Committee Members will have 15 minutes for Q&A.

After all the questions are answered, the meeting will adjourn.

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

Criterion	Weight Points	Description
Qualifications	40.00	Qualifications of professional personnel assigned to project 1. Qualifications of assigned staff
Experience	30.00	Experience and success in providing Sewer Modeling services to companies and governmental agencies
Resources and Approach	30.00	Resources and approach
Total	**100.00**	

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: AIRIA AUSTIN **Date:** 10-16-2024

Signature: A. Austin.

Firm Name: SSN Engineering

Evaluation

Criterion	Rating
Qualifications	38
Experience	25
Resources and Approach	28

Notes:

13 YEARS IN THE BUSINESS
WILL HAVE TO REACCESS ALL OF THE DATA

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: CARLOS GONZALEZ **Date:** 10.16.24

Signature:

Firm Name: SSN Engineering

Evaluation

Criterion	Rating
Qualifications	40
Experience	30
Resources and Approach	27

Notes:

- 13 years in business.
- Has provided services to the City on many projects including a sewer modeling project.
- Good approach and references

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

EVALUATION FORM

RFQ 24-1011200 for Sanitary Sewer Collection Hydraulic Modeling

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: Owen Carney **Date:** 10.16.24

Signature: Owen Carney

Firm Name: SSN Engineering

Evaluation

Criterion	Rating
Qualifications	40
Experience	30
Resources and Approach	30

Notes:

Has the qualification

Has 30 years experience

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Qualifications	
Experience	
Resources and Approach	

Notes:

Sponsored by: Interim City Manager

RESOLUTION NO. 24-XXXX

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, AUTHORIZING THE INTERIM CITY MANAGER TO REJECT ALL BIDS FOR REQUEST FOR PROPOSALS (RFP) 24-1008200 FOR TREE AND PLANT INSTALLATION SERVICES; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City of Opa-Locka ("City") previously issued Request for Proposals (RFP 24-1008200) to solicit competitive proposals for the American Rescue Plan Act (ARPA) funded project of Tree and Plant Installation; and

WHEREAS, one (1) proposal was received on October 8th, 2024, and certified by the City Clerk; and

WHEREAS, the Interim City Manager is proposing that the City Commission reject all bids for Request For Proposal (RFP 24-1008200) related to Tree and Plant Installation Services as the sole bid received was not in compliance with the Request For Proposals (RFP) requirements; and; and

WHEREAS, the City Commission has determined that authorizing the City Manager to reject all proposals for RFP 24-1008200 for Tree and Plant Installation Services is in the best interest of the City and its residents.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA:

Section 1. Recitals Adopted.

The recitals to the preamble herein are incorporated by reference.

Section 2. Approval to Reject All Bids. The City Commission of the City of Opa-Locka hereby authorizes the City Manager to reject all proposals for RFP 24-1008200 for Tree and Plant Installation Services.

Section 3. Scrivener's Errors. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors, which do not affect the intent of this Resolution may be authorized by the Interim City Manager, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. **Effective Date.** This Resolution shall take effect immediately upon adoption by the City Commission of the City of Opa-Locka.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____ (Yes)	_____ (No)
Commissioner Kelley	_____ (Yes)	_____ (No)
Commissioner Williams	_____ (Yes)	_____ (No)
Vice Mayor Ervin	_____ (Yes)	_____ (No)
Mayor Taylor	_____ (Yes)	_____ (No)

City of Opa-locka
Agenda Cover Memo

Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**				
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**	
				X				
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**	
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		**X**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**	
							X	
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**					
		X						
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:** **Enhance Organizational** ☐ **Bus. & Economic Dev** ■ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ☐ **Communication** ☐		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*			
		X						
Sponsor Name	Interim City Manager		**Department:**		City Manager			

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA AUTHORIZING THE INTERIM CITY MANAGER TO REJECT THE PROPOSAL FOR RFP 24-1008200 FOR TREE AND PLANT INSTALLATION SERVICES.

Staff Summary:

The City Commission approved the issuance of RFP No. 24-1008200 to solicit competitive proposals for the ARPA funded project of Tree and Plant Installation Services. One (1) proposal was received on October 8th, 2024, and certified by the City Clerk. A request is being made to

reject the proposal because the single proposal was not in compliance with the Request For Proposal (RFP) requirements.

Four (4) vendors attended the pre-bid meeting; My Lawn Services, SFM Landscaping, Tree Sources and Greenshape. Following the meeting, questions were only received from SFM Landscaping, which were addressed in Addendum #1. City Administration believes it is in best interest of the City to withdraw this project and allocate the respective ARPA funding to Arts Right of Way Project.

Financial Impact: There is no financial impact for this item.

Proposed Action:

Staff recommends the City Commission approve the recommendation to reject the bid related to Tree and Plant Installation Services.

Attachment:

Bid Certification for RFP 24-1008200- Tree and Plant Installation Services
Addendum # 1
Email-SFM Landscaping

CITY OF OPA-LOCKA

RFP NO: 24-1008200

Oct 15, 2024 @ 3:00 P.M.

Evaluation

~~WALK THROUGH~~ MEETING, 780 FISHERMAN STREET, 4th floor, OPA-LOCKA, FL 33054

NAME	COMPANY NAME	EMAIL	PHONE #
Adelina Gross	opa-locka	agross@opalockafl.gov	305-953-2868
Yesly Guillén	City of Opa-locka	Yguillen@opalockafl.gov	3/953-2868
Carlos Gonzalez	opa-locka	cgonzalez@opalockafl.gov.	305 953-2868

Evaluation Meeting Script

Steps of Organizing an Evaluation Meeting:

1. Send an email to the members detailing the rules of the meeting.
2. Schedule Meetings via Zoom or Teams, confirming the availability of the members
3. Share the link with RFP respondents. (All the respondents to the bid or shortlist candidates).

Evaluation Committee Script for Meeting Lead/Organizer:

Good Day, Welcome, and thank you for participating in the City of Opa-locka Committee Evaluation meeting **for RFP NO: 24-1008200 Tree and Plant Installation Services**

Today's Date: Tuesday, October 15, 2024

This meeting is being recorded and is open to the public (Inform participants)

My Name is Jay Bergel Procurement Officer for the City

THE MEETING OBJECTIVE: Committee members will evaluate submitted proposals for this RFP. The committee members may ask the bidding firm questions. The bidding firm may only answer questions posed by the committee. No comments are allowed, and guests are not allowed to dictate the scoring outcome of the committee.

The meeting will go as followed: The firms will be asked questions in the order of the meeting agenda that was shared previously.

At this time, I invite all City personnel, consultants, and committee members to introduce themselves for the record.

Now, I'll allow you to introduce yourself. Please state your name, company, and title when called.

With that being said, committee members will begin your evaluation.

Committee Members will have 15 minutes for Q&A.

After all the questions are answered, the meeting will adjourn.

EVALUATION FORM

RFP NO: 24-1008200
Tree and Plant Installation Services

Criterion	Weight Points	Description
Qualifications	15.00	Qualifications of professional personnel assigned to project.
Experience	15.00	Experience and success in providing services outlined in the RFP to companies and governmental agencies.
Resources and Approach	40.00	Resources and approach
Price Proposal	30.00	Price Proposal
Total	**100.00**	

EVALUATION FORM

RFP NO: 24-1008200
Tree and Plant Installation Services

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: CARLOS GONZALEZ **Date:** 10-15-24

Signature:

Firm Name: My Lawn Services, Inc.

Evaluation

Criterion	Rating
Experience and Qualifications	13
References	14
Resources and Approach	35
Price Proposal	25

Notes:

- Has been doing business with the City for 10 years. (maintenance)
- Has been in business for 31 years.
- Good references.
- ~~$118,890~~ Revised $~~111,620~~ 116,120.00

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

EVALUATION FORM

RFP NO: 24-1008200
Tree and Plant Installation Services

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: Adelina Gross **Date:** 10/15/2024

Signature: Adelina Gross

Firm Name: My Lawn Services, Inc.

Evaluation

Criterion	Rating
Experience and Qualifications	7
References	7
Resources and Approach	13
Price Proposal	10

Notes: Proposal was not clear and misleading.

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

EVALUATION FORM

RFP NO: 24-1008200
Tree and Plant Installation Services

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: Yesly Guillen. **Date:** 10/15/24.

Signature:

Firm Name: My Lawn Services, Inc.

Evaluation

Criterion	Rating
Experience and Qualifications	9.4
References	9.4
Resources and Approach	30
Price Proposal	20

Notes:

Company w. 31 years of experience, mainly providing maintenance service to HOA's. Governmental experience only w. the city of Ofa-lockan. Some discrepancies & errors encountered on the Price proposal.

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

Firm Name:

Evaluation

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Notes:

CITY OF OPA-LOCKA
CERTIFICATION

REQUEST FOR PROPOSALS
RFP NO. 24-1008200

Tree and Plant Installation Services

I, Joanna Flores, City Clerk of the City of Opa-locka, Florida, do hereby certify that sealed proposals were received and opened at the Opa-locka Municipal Complex, 780 Fisherman Street, 4th Floor, Opa-locka, Florida, at 2:19 p.m. this 8th day of October, 2024.

PROPOSAL(S) RECEIVED

NAME/ADDRESS	**Lump Sum**
1. **My Lawn Service, Inc.** **17820 SW 174th Street** **Miami, FL 33187** **Contact: Gulseren Lugo Artega, President** **Tel: 786.776.9282**	**$118,890.00**

I further certify that proposal(s) were submitted and properly opened in the presence of the following:

Junior Bergel
Procurement Officer
City of Opa-locka

Joanna Flores, CMC
City Clerk
City of Opa-locka

CITY OF OPA-LOCKA

RFP NO: 24-1008200
Tree And Plant Installation Services

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ADVERTISEMENT

RFP 24-1008200

Tree And Plant Installation Services

Sealed proposals for Tree And Plant Installation Services for the City of Opa-locka will be received by the City's Clerk Office, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, **Tuesday, October 08, 2024 by 2:00 p.m.** Any RFP Package received after the designated closing time will be returned unopened. The City will accept proposals by mail; however, the proposal must be received by 2:00 p.m. ET on the due date. In addition, the proposal may be submitted via www.demandstar.com (e-bid) by 2:00 p.m. ET.

The address to submit sealed proposal is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked **RFP 24-1008200 Tree And Plant Installation Services.**

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that proposer whose proposal best complies with the **RFP NO 24-1008200** requirements.

Joanna Flores
City Clerk

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka seeks proposals for Tree And Plant Installation Services. These services must be efficient, and economical, and adhere to industry standards and best practices. The Contract will be awarded to the highest ranked Proposer, as described in the Evaluation Procedures Section below.

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail. However, it is Proposer's responsibility to submit Proposer's proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 p.m. ET on 10/08/2024. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: **RFP NO. 24-1008200 Tree And Plant Installation Services**

This package shall also include the Proposer's return address. Proposers may withdraw their proposals by notifying the City in writing at any time prior to the deadline for proposal submittal. After the deadline, the proposal will constitute an irrevocable offer, for a period of 90 days. Once opened, proposals become a record of the City and will not be returned to the Proposer.

Proposers should ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611, Option 1, before proposal closing time. Any proposal received after the established deadline **will not** be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an **original and six (6) copies (a total of 7) plus one copy on USB flash drive in PDF format** of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail or any other delivery medium.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the RFP.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the RFP until eight (8) days before the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the RFP so that they may read and interpret such for themselves. The City's Procurement Officer is authorized to interpret any portion of this RFP or give information as to the requirements of the RFP in addition to what is contained in the written RFP document.

1-6. Addendum: The City may record its response to inquiries and any supplemental instructions as a written addendum. The City may post written addenda on its website up to three (3) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the RFP opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Procurement Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this RFP does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed, accepted by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties. The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re- advertise other proposals.

1-8. Contractual Agreement: This RFP and Contractor proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. All legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. **Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.**

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible**.**

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke exemptions to disclosure provided by law in the response to the RFP and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this RFP or the service, study, or project to which it relates.

1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions specified herein. In the event the Proposer is a governmental entity or a self-insured organization, different insurance requirements may apply. Misrepresentation of any material fact, whether intentional or not, regarding the Proposers' insurance coverage, policies or capabilities may be grounds for rejection of the

proposal and rescission of any ensuing Agreement.

1. Evidence of General Liability coverage with limits not less than $1,000,000 per Occurrence/ $2,000,000 Aggregate (Including Policy Number and Policy Period);

2. Evidence of Auto Liability coverage with limits not less than $1,000,000 per Occurrence/$1,000,000 Aggregate (Including Policy Number and Policy Period);

3. Evidence of Workers' Compensation coverage with statutory limits and Employer's Liability coverage with limits not less than $100,000 (Including Policy Number and Policy Period);

4. The City listed as an additional insured (this may be specifically limited to the specific job(s) the contractor will be performing);

5. Minimum 30-day written notice of cancellation.

1-13. Licenses: Proposers, both corporate and individual, must be fully licensed and certified in the State of Florida at the time of RFP submittal. The proposal of any Proposer that is not fully licensed and certified shall be rejected.

1-14. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing processes because they have been found guilty of a public entity crime. No public entity shall award any contract to or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the RFP proposal forms, Proposer attests that it has not been placed on the "Convicted Vendor List".

1-15. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work, goods or services for the City of Opa-locka.

1-16. Drug-Free Workplace: Preference shall be given to businesses with Drug-Free Workplace (DFW) programs. Whenever two or more proposals which are equal with respect to price, quality, and service are received by the City for the procurement of commodities or contractual services, a proposal received from a business that completes the attached DFW form certifying that it is a DFW shall be given preference in the award process.

1-17. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

1-18. Protests: Protests of the plans, specifications, and other requirements of the request for proposal and bids must be received in writing by the City Clerk's Office within at least ten (10)

working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-19. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City determines that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances.

A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (RFP), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**
Release Date	09/09/2024
Pre-Bid Meeting	TBA
Written Questions Due	09/23/2024 @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "RFP No: Bid Questions"
Response to Questions	09/30/2024 @ 5:00pm
Due Date/Bid Opening	10/08/2024 @ 2:00 pm
1st Evaluation Committee Meeting	TBA
Award Recommendation	TBA
Commission Approval	TBA
Post Award	TBA

SCOPE OF SERVICES

Tree And Plant Installation Services

Introduction and Goals

The City is seeking qualified contractors to submit proposals for native tree and plant installation and initial maintenance to ensure survivability. The selected contractor will assess suitable areas and spaces along the roadways identified below. The City intends to choose one or more companies to provide tree and plant installation services as per the specifications outlined in this RFP document.

Contractors submitting proposals shall be able to demonstrate experience in the type of work described in the RFP and have available resources in the form of trained and licensed personnel, support services, and specialized sub-contractor(s) as needed. The goal is to ensure the City's trees and plants installed in this project receive sufficient initial maintenance to allow them to firmly establish their roots.

Scope of Work

1. The Contractor(s) shall provide all personnel, equipment, tools, tree stock, materials, and supervision necessary to ensure that trees and plantings are procured and installed professionally. All other necessities for watering shall be included in the responses.

2. The Contractor will provide the City with a list of proposed Florida Native Trees and Plants suitable for the City's climate and soil conditions.

3. Installation of flower beds at medians, swales and main corridors. Plants must be flowery, drought tolerant and low maintenance (preferably xeriscape).

4. Installation of Flower Beds and Trees shall occur along the following roadways:

a. Downtown Center
b. Magnolia North
c. Perviz Ave
d. Ali Baba Ave
e. Opa-locka Blvd
f. Service Rd
g. Magnolia Gardens
h. NW 151st Street
i. Sharazad Boulevard

5. The Contractor(s) is expected to identify the proper tree and/or plant for each location considering form, shape, size at maturity, and the role or function in the landscape, to avoid unintended negative consequences especially conflicts with power lines and other obstructions or impacts on City curbs, sidewalks, swales and medians.

6. The Contractor(s) shall be responsible for requesting and marking all underground utilities before tree installation.

7. Prepare a list of trees and plants for each location for review and approval by City staff. All trees and plants must be in good condition prior to installation. Trees must comply with the State and Miami-Dade County standards (GREEN/NEAT Program)

8. Haul away soil when needed to achieve the appropriate root flare level relative to the site grade. Apply at least 3 cubic feet of shredded hardwood mulch and install tree guard to protect the trunk. Trees will receive stakes when necessary to maintain trunk straightness.

9. The Contractor(s) shall provide watering services for trees and plants planted in public spaces for the first growing season following planting; replacing all dead and distressed trees installed in this project.

10. Watering Services, Staking and Re-staking, Mulch installation and replacement must be included. A minimum of six months of maintenance shall be provided after the trees and plants are installed.

11. MOT, Planting Schedule and Confirmation that all Utilities have been located must be provided to the City, and all these services must be included in the cost proposal.

12. The Contractor will provide a report to the City after planting is completed. The report shall be provided within a week of planting being completed for the season and must include verification that all plantings went according to plan, the date each tree was planted, and any details on required adjustments to species or location approved by the City that may have been necessary. A GIS Google Map showing details such as: species, height, variety, installation date must be provided to the City.

    The proposal must include the following items to be considered:

- List of proposed Florida Native Trees (with or without canopy) and Plants approved and/or recommended by IFAS, MDC or any other relevant organization appropriate for the climate and soil of the City of Opa-locka.
- Price list for each tree and plant including planting, staking and mulch installation as outlined in the Price section
- Proposed maintenance and watering services depending on the species and/or variety need.

A. Other General Conditions

a. Specification of all work and materials is required to conform to the scope of work listed on the RFP. Any proposed changes from these specifications shall be noted in the proposals.

b. The Contractor is responsible for notifying all public agencies and utilities affected by their work.

c. Credentials shall include at least one Certified Arborist on staff.

d. All applicable federal, state, and local traffic control laws and regulations must be followed, and appropriate personnel trained and certified when required. Appropriate control of traffic is also required.

e. Hours of operations for work will be limited to 7:00 a.m. to 4:00 p.m., Monday through Friday, except City holidays. Weekend work within these hours may be approved if cost-effective and beneficial to the City. Proposers should specify in their proposals whether they will seek weekend work.

PART III
PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this RFP.

3-2 MINIMUM SUBMISSION REQUIREMENTS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents
Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal
3.2.3.1 Limit to one or two pages.
3.2.3.2 Briefly state the Proposer's understanding of the work to be done
3.2.3.3 Give the names of the persons who will be authorized to make representations for the Proposer, their titles, addresses and telephone numbers.
3.2.3.4 Provide an official signature of a Corporate Officer certifying the contents of the Proposer's responses to the City's Request for Proposal.

3.2.4 Tab 3 - General Information
3.2.4.1 Name of Business.
3.2.4.2 Mailing Address and Phone Number.
3.2.4.3 Names and contact information of persons to be contacted for information or services if different from person in charge.
3.2.4.4 Normal business hours.
3.2.4.5 State if business is local, national, or international and indicate the business legal

status (corporation, partnership, etc.).

3.2.4.6 Give the date business was organized and/or incorporated, and where.

3.2.4.7 Give the location of the office from which the work is to be done and the number of professional staff employees at that office.

3.2.4.8 Indicate whether the business is a parent or subsidiary in a group of firms/ agencies. If it is, please state the name of the parent company.

3.2.4.9 State if the business is licensed, permitted and/or certified to do business in the State of Florida and attach copies of all such licenses issued to the business entity.

3.2.5 Tab 4 – Project Approach

Describe in detail the proposal to fulfill the requirements of the scope of services listed in Part II of this RFP.

3.2.6 Tab 5 – Experience and Qualifications

3.2.6.1 Specify the number of years the Proposer has been in business.

3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this RFP.

3.2.7 Tab 6 – Schedule

3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Program.

3.2.7.2 Indicate the earliest available start date for Proposer's project team.

3.2.7.3 Indicate the project completion date based on the date provided in 3.2.7.1.

3.2.8 Tab 7 – Pricing of Services

3.2.8.1 The fee basis should be based on the Cost Proposal Sheet.

3.2.9 Tab 8 – References

3.2.9.1 List a minimum of three references in Florida for which the Proposer has provided services outlined in the RFP. Include the name of the organization, brief description of the project, name of contact person, telephone number and email address.

3.2.10 Tab 9 – Additional Forms

Proposers must complete and submit as part of its Proposal all the following forms and/or documents.

- Proposer Qualifications
- Cost Proposal Sheet
- Certification Regarding Debarment and Suspension
- Drug Free Workplace Certification
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verification

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY THE PROPOSER.

EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee consisting of City personnel will review and evaluate the proposals. The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the RFP, including a detailed explanation of how the services shall be performed.

Each proposal will be reviewed to determine if the Proposal is responsive to the submission requirements outlined in the Solicitation. A responsive Proposal is one which follows the requirements of this Solicitation that includes all documents submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. The Contract will be awarded to the most responsive Proposer whose Proposal best serves the interest of and represents the best value to the City.

4-2 EVALUATION CRITERIA

The Committee may choose to invite any firm to make a presentation and be interviewed by the Committee as part of the evaluation process. The Committee's decision will be communicated by staff to all Proposers. The Proposer's presentation may clarify but may not modify its submitted Proposal. Any discussion between the Proposer and Evaluation Committee during presentations is intended only to provide clarification in response to questions from the Committee.

Category	Weight
Qualifications of professional personnel assigned to project.	15%
Experience and success in providing services outlined in the RFP to companies and governmental agencies.	15%
Resources and approach	40%
Price Proposal	30%
TOTAL	100%

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee to clarify their proposals. Only those firms with the highest scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During

the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentation phase. References and site visits (if completed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this RFP, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated Agreement. The City's decisions will be final. Following the selection of firm, the expectation is that an Agreement will be executed between both parties. City staff will recommend the award to the responsible Proposer whose Proposal is determined to provide overall best value to the City, considering the evaluation factors in this RFP.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

The Proposer MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. **Name and Title of Principal Officers** **Date Elected:**

   _____ _____

   _____ _____

   _____ _____

   _____ _____

6. The length of time in business:_____years

7. The length of time (continuous) in business as a service organization in Florida:
   _____years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka RFP during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

COST PROPOSAL SHEET

The cost proposal should include all fixed fees, deliverables, and any other related costs that may arise.

Item Line Description	Unit Cost	Total Cost
Project Mobilization	NA	
List of prices for each type of tree proposed for this project. Includes different sizes, installation, staking, replacement of failing trees, soil preparation and fertilization		NA
List of prices for each type of plant proposed for this project. Includes different sizes, installation, replacement of failing plants, soil preparation and fertilization		NA
Maintenance Services (Six Months of Service After Installation)		
Watering Services	NA	
Supply and Install Mulch (Cubic Feet/Bag)		NA
Supply and Install Different Varitities of Sod (Square Foot)		NA
Supply, Install and Grade Bulk Topsoil (Cubic Yard)		NA
Supply, Install and Grade Non-Bulk Topsoil (50 Pound Bag)		NA

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by_____
(Name)

the _____ of _____
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

_____ _____
Date Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20____

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large

My commission expires:

From: Gulseren Lugo
To: Junior Bergel
Subject: Re: Maintenance Services for RFP 24-1008200 Tree and Plant Installation Services
Date: Friday, October 18, 2024 3:00:30 PM
Attachments: image001.png

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Yes. All listed services bellow are included in revised propsal.

Sent from Yahoo Mail for iPhone

On Friday, October 18, 2024, 2:14 PM, Junior Bergel <jbergel@Opalockafl.gov> wrote:

> Mr. Lugo:
>
> Please confirm and verify maintenance services is for all designated Areas in the RFP:
>
> **Service for ALL areas must include**:
> Staking of new and existing planted trees in the designated Areas
> Removal and Replacement of damage stakes
> Straightening of new and existing trees in the designated Areas
> Maintenance of all planted trees, palms, shrubs, and grass
>
> Thanks,
> Jay Bergel
> Procurement Officer
> 780 Fisherman Street. 4th Floor
> Opa-locka, Florida 33054
> jbergel@opalockafl.gov
>
> 
>
> Public Records Notice: Under Florida Law, email addresses and electronic communications are public records. If you do not want your email address or the content of your electronic communication released in response to a public records request, do not send electronic mail to this entity.

EVALUATION FORM

-

RFP NO: 24 1008200
Tree and Plant Installation Services

Criterion	Weight Points	Description
Qualifications	15.00	Qualifications of professional personnel assigned to project.
Experience	15.00	Experience and success in providing services outlined in the RFP to companies and governmental agencies.
Resources and Approach	40.00	Resources and approach
Price Proposal	30.00	Price Proposal
Total	**100.00**	

EVALUATION FORM

-

RFP NO: 24 1008200
Tree and Plant Installation Services

By signing this form as an Evaluator, I certify that I have no conflict of interest.

Reviewer Name: _____ **Date:** _____

Signature: _____

Firm Name: _____

Evaluation

Notes:

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Firm Name: _____

Evaluation

Notes:

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

Firm Name: _____

Evaluation

Notes:

Criterion	Rating
Experience and Qualifications	
References	
Resources and Approach	
Price Proposal	

EVALUATION MATRIX

RFP NO: 24 1008200
Tree and Plant Installation Services

Firm Name: My Lawn Services, Inc.

Evaluation

	Reviewer Name:	Adelina Gross		Yesly Guillen		Carlos Gonzalez					
Criterion	**Weight Points**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**
Qualification	15.00	7	7.00	9	9.00	13	13.00		0.00		0.00
Experience	15.00	7	7.00	9	9.00	14	14.00		0.00		0.00
Resources and Approach	40.00	15	15.00	30	30.00	35	35.00		0.00		0.00
Price Proposal	30.00	10	10.00	20	20.00	25	25.00		0.00		0.00
Total	**100.00**		**39.00**		**68.00**		**87.00**		**0.00**		**0.00**

EVALUATION MATRIX

RFP NO: 24 1008200
Tree and Plant Installation Services

FIRM SELECTED

Reviewer:

Adelina Gross	39.00	0.00	0.00	0.00	0.00
Yesly Guillen	68.00	0.00	0.00	0.00	0.00
Carlos Gonzalez	87.00	0.00	0.00	0.00	0.00
0					
0					
AVERAGE RATING	**64.67**	**0.00**	**0.00**	**0.00**	**0.00**

MY LAWN SERVICE, INC

17820 SW 174TH STREET

MIAMI, FL 33187

786-776-9282

EXPERIENCE AND QUALIFICATION

My Lawn Service has been in business since May, 1993 it has been 31 years that we have been working hard and giving our customers the best all around Landscape Maintenance, Tree Trimming, Installing New Landscape, Aquatic in Lakes and Rivers, Sprinkler Repairs and Installation. We do it all . We do our work in Homeowners Associations, Cities, and also individual homes, office buildings.

We are very proud of the work we do, we thrive for excellence always. We have the knowledge of all trees, native plants and all shrubs, plants and ground covers. We also have gathered knowledge of the trees, palms and plants that are used in our area of South Florida and the care they require.

All the experience we have achieved during these years has been hands on we are always there making sure all landscape is installed correctly so trees, palms and shrubs can grow and thrive to its maximum. We will take care of plants we install making sure they do not suffer any from of stress so they can flourish.

REFERENCE AND QUALIFICATIONS:

Our main qualification is the hands on experience we have for 31 years.

My Lawn Service, Inc.

17820 SW 174th Street.

Miami, Fl. 33187

We have Liability Insurance up to $1,000,000.00 and Workmans Compensation Insurance. We have insurance on all trucks and trailers.

The trailers are insured for Accidents and Theft, we have 3 enclosed trailers, and 1 open trailer. The enclosed trailer are 16 X 7 – 2 axle, one open trailer 16 X 7. We have 3 Izusu trucks and 2 pickups one is a 2019 Ram and the other a 2015 Silverado 2500.

We are licensed with an Occupational License, Section Type of Business 213 – Lawn/Landscape/Tree Service/Sprinklers and Aquatic Lake Maintenance.

SEE ATTACHED LICENSES AND INSURANCE

LIST OF OUR CONTRACTS: REFERENCE

1. FOREST LAKES MASTER ASSOCIATION
   C/O ALLIED PROPERTY GROUP
   12350 SW 132 CT. SUITE: 114
   MIAMI, FL. 33186

2. SHOMA HOMES AT FOREST LAKES
   C /O ALLIED PROPERTY GROUP
   12350 SW 132 CT. SUITE: 114

3. MADEIRA II AT ISLANDS OF DORAL
   C/O ALLIED PROPERTY GROUP
   12350 SW 132 CT SUITE: 114

4. LENNAR TOWNHOMES
   16286 SW 103 TERR
   MIAMI, FL. 33196

5. ADAGIO AT THE HAMMOCKS
   C/O MARATHON PROPERTIES OF MIAMI
   14800 HAMMOCKS BLVD

ADDITIONAL LIST:

ISLANDS AT DORAL CLUBHOUSE

NETHERLANDS AT ISLANDS AT DORAL

THE COURTS AT DORAL ISLES

VILLAS DE LAGO

CITY OF OPA LOCKA

CORSICA AT ISLANDS AT DORAL

WINDWARD AT ISLANDS OF DORAL

DORAL COMMON CORP

CAMPO BELLO HOA

GABLES POINT

ISLANDS AT DORAL MASTER

6.

Re: My Lawn Service

To whom it may concern;

I would like to take this opportunity to highly recommend My Lawn Service for consideration should you be actively looking for a responsible vendor in the area of lawn maintenance, gardening and shrub/plant material.

As President of my homeowner association, I have had the pleasure of working with Marina and her crew for over 5 years. She brings hard work, discipline and a genuine concern to any project she has accepted responsibility for in our community.

My Lawn Service maintains their equipment, keeps the workforce properly dressed as to be identifiable, and keeps the work area free of litter. They have professional control of the workforce and works within the restrictions set for hours of operation.

My Lawn Service, lead by Marina, goes out of her way to bring areas not covered by the contract, to the attention of the Board, when necessary. She has served as our advisor in many areas that the Board lacks the knowledge or experience in making decisions for the betterment of the community.

My Lawn Service would make an excellent supplier to anyone charged with the responsibility for maintaining a beautiful and professional looking landscape and plantscape area.

Very truly yours,

Jesse A. Jones
President
Doral Colony Homeowners Association
305-753-5999

years from 1996 to 2007 when I was President and Board Member of the Adagio at the

GUARANTEE MANAGEMENT SERVICES, INC.
6925 N.W. 42 STREET
MIAMI, FLORIDA 33166
305-262-6120

To Whom It May Concern:

This letter will serve to acknowledge the excellent service which has been provided by "My Lawn Service, Inc." to my properties.

I have found by my experience with this company that it is one of the best in the Lawn Maintenance and Landscape business. I have dealt with other companies in this field and have found they are very much inferior to the service provided by them.

They are honest, reliable and very knowledgeable of the work they do. This company has enhanced the appearance and value of the properties they have serviced for me.

If you have any questions or need any further information, please do not hesitate to contact me at the number listed above.

Sincerely,

Angelina Zalaquett
Property Manager

From: Patrick Fiore, former president of Adagio at the Hammocks HOA.

ie: Marina Ojeda, My Lawn Service

My Lawn Service was our primary landscaping and grass cutting company during the years from 1998 to 2007 when I was President and Board Member of the Adagio at the Hammocks HOA, in West Kendall. I can tell you the service the community received from My Lawn was first rate. Ms. Ojeda 's company always provided great and timely service and her professional experience in landscaping matters was always beneficial to myself and fellow board members. Her staff was extremely courteous, and especially helpful after weather related events like Hurricanes Katrina and Wilma. Ms. Ojeda was readily accessible at all hours. As a former Community Councilman in West Kendall it was a pleasure to see the kind of commitment and professionalism that companies in the private sector like My Lawn provided. I heartily recommend My Lawn Service to the City of Opa Locka. If I can be of further assistance, I can be reached at 786 200 9344.

Sincerely,

Patrick M. Fiore
13805 SW 77th Court
Village of Palmetto Bay, FL. 33158

To Whom It May Concern:

I would like to take this opportunity to express my gratitude for the services provided by Ms. Marina Ojeda as the owner of My Lawn Services while serving as the primary grounds keeper for Lakes on the Green (LOG) community in Miami, Florida. Ms. Ojeda managed a very professional team and always provided quality service.

Her professional demeanor and willingness to go above and beyond her normal responsibilities set Ms. Ojeda and this company apart from other like lawn care companies. Ms. Ojeda is smart, hard-working, and always prepared to do what is best for the community. I found her company to be extremely reliable and a credit to our community.

It was a pleasure working with Ms. Ojeda and I highly recommend her company to any HOA looking for quality lawn care. I encourage you to contact me at anytime if you should have any questions.

Sincerely,

James Kelley
Vice-President, LOG HOA
305.343.7214

LETTER OF RECOMENDATION

THIS IS TO INFORM YOU THAT "MY LAWN SERVICE" A MAINTANANCE COMPANY IN MIAMI HAVE BEEN DOING A SUPERB JOB IN OUR COMMUNITY.

THE NAME OF OUR COMMUNITY IS ADAGIO AND HAS 145 HOUSES CLOSE TO A LAKE AND HUNDREDS OF TREES AND ACRES OF LAWN: MY LAWN SERVICE IS WITH US ON THE PERMANENT BASIS AND WE, THE 145 HOME OWNERS ARE VERY HAPPY WITH THE WORK THAT THEY ARE DOING.

SPECIAL THANKS TO MARINA OJEDA

THE BOARD OF DIRECTOR OF ADAGIO.

AMA Management Services, Inc.
5050 N.W. 74th Avenue, Miami, Florida 33166 ▪ 305/592-3011 ▪ Fax 305/593-5020

My Lawn Service, Inc.
14450 S.W. 208 Avenue
Miami, FL 33196
Att: Marina Ojeda, President

Dear Ms. Ojeda:

I would like to this opportunity to thank you for the excellent way you have handled the landscape and maintenance of the communities you are doing for me.

I have only received positive feedback from many pleased Homeowners. I will not hesitate to recommend you, so please feel free to contact me at anytime.

Sincerely,

Anicia Morales
President



LANDSCAPE BY MY LAWN SERVICE INC







State of Florida

Department of State

I certify from the records of this office that MY LAWN SERVICE, INC. is a corporation organized under the laws of the State of Florida, filed on May 5, 1993, effective May 4, 1993.

The document number of this corporation is P93000032740.

I further certify that said corporation has paid all fees due this office through December 31, 2004, that its most recent annual report/uniform business report was filed on April 19, 2004, and its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

I further certify that this is an electronically transmitted certificate authorized by section 15.16, Florida Statutes, and authenticated by the code, 104A00058149-100704-P93000032740-1/1, noted below.

Authentication Code: 104A00058149-100704-P93000032740-1/1

Given under my hand and the
Great Seal of the State of Florida,
at Tallahassee, the Capital, this the
Seventh day of October, 2004

Glenda E. Hood
Glenda E. Hood
Secretary of State

Sunbiz.org DIVISION of CORPORATIONS
an official State of Florida website

Detail by Entity Name

Florida Profit Corporation
MY LAWN SERVICE, INC.

Filing Information

Document Number	P93000032740
FEI/EIN Number	65-0412970
Date Filed	05/05/1993
Effective Date	05/04/1993
State	FL
Status	ACTIVE
Last Event	AMENDMENT
Event Date Filed	07/22/2024
Event Effective Date	NONE

Principal Address

17820 SW 174 ST
MIAMI, FL 33187

Changed: 05/05/2000

Mailing Address

17820 SW 174 ST
MIAMI, FL 33187

Changed: 05/05/2000

Registered Agent Name & Address

GULSEREN LUGO ARTEAGA
17820 SW 174 ST
MIAMI, FL 33187

Name Changed: 07/22/2024

Address Changed: 07/22/2024

Officer/Director Detail

Name & Address

Title PST

GULSEREN LUGO ARTEAGA

17820 SW 174 ST
MIAMI, FL 33187

Title V

MARIA FELIX OJEDA
17820 SW 174 ST
MIAMI, FL 33187

Annual Reports

Report Year	Filed Date
2022	03/02/2022
2023	02/08/2023
2024	02/09/2024

Document Images

07/22/2024 -- Amendment	View image in PDF format
02/09/2024 -- ANNUAL REPORT	View image in PDF format
02/08/2023 -- ANNUAL REPORT	View image in PDF format
03/02/2022 -- ANNUAL REPORT	View image in PDF format
01/13/2021 -- ANNUAL REPORT	View image in PDF format
01/29/2020 -- ANNUAL REPORT	View image in PDF format
02/01/2019 -- ANNUAL REPORT	View image in PDF format
02/02/2018 -- ANNUAL REPORT	View image in PDF format
01/27/2017 -- ANNUAL REPORT	View image in PDF format
05/05/2016 -- Amendment	View image in PDF format
03/22/2016 -- ANNUAL REPORT	View image in PDF format
03/02/2015 -- ANNUAL REPORT	View image in PDF format
01/11/2014 -- ANNUAL REPORT	View image in PDF format
02/13/2013 -- ANNUAL REPORT	View image in PDF format
02/08/2012 -- ANNUAL REPORT	View image in PDF format
01/19/2011 -- ANNUAL REPORT	View image in PDF format
05/13/2010 -- Amendment	View image in PDF format
04/09/2010 -- ANNUAL REPORT	View image in PDF format
04/17/2009 -- ANNUAL REPORT	View image in PDF format
03/14/2008 -- Amendment	View image in PDF format
01/07/2008 -- ANNUAL REPORT	View image in PDF format
01/29/2007 -- ANNUAL REPORT	View image in PDF format
03/28/2006 -- ANNUAL REPORT	View image in PDF format
03/23/2005 -- ANNUAL REPORT	View image in PDF format
10/06/2004 -- Amendment	View image in PDF format
08/16/2004 -- Reg. Agent Change	View image in PDF format
08/06/2004 -- Off/Dir Resignation	View image in PDF format
04/19/2004 -- ANNUAL REPORT	View image in PDF format
01/29/2003 -- ANNUAL REPORT	View image in PDF format
02/05/2002 -- ANNUAL REPORT	View image in PDF format
07/25/2001 -- ANNUAL REPORT	View image in PDF format

05/05/2000 -- ANNUAL REPORT	View image in PDF format
04/23/1999 -- ANNUAL REPORT	View image in PDF format
02/17/1998 -- ANNUAL REPORT	View image in PDF format
04/28/1997 -- ANNUAL REPORT	View image in PDF format
06/20/1996 -- ANNUAL REPORT	View image in PDF format

MIAMI-DADE COUNTY

7288649

MIAMI-DADE COUNTY - STATE OF FLORIDA
LOCAL BUSINESS TAX
2024 - 2025 APPLICATION

N/A October 07, 2024

RENEWAL
RECEIPT: 7577427
STATE #

DBA/BUSINESS NAME:
MY LAWN SERVICE

BUSINESS LOCATION:
335 NW 128TH AVE
MIAMI, FL 33182-1125

BUS. COMMENCEMENT DATE: 08/26/2019

SEC	TYPE OF BUSINESS
SER-LAW	SERVICE BUSINESS
10	

OWNER/CORP.
MY LAWN SERVICE GROUP INC
C/O MARCELO A BARNIQUEL, MY LAWN SERVICE GROUP
PHONE #

335 NW 128TH AVE
MIAMI, FL 33182-1125

NAICS CODE: 561730

Print Blocking Flags:

Addt'l Doc Description: Certificate from FL Dept of Environmental Protection

APPLICATION DETAILS

FEE		AMOUNT
Receipt Fee		30.00
UMSA Fee		30.00
Beacon Council Fee		15.00
Bingo Permit Fee		0.00
Nightclub Permit Fee		0.00
Multi-Municipal Contractor Fee		0.00
Restricted Contractor Fee		0.00
Library Fee		0.00
Transfer Fee		0.00
Doing Business without a License Penalty		0.00
Late Penalty		0.00
Collection Cost		0.00
NSF Fee		0.00
Prior Years Due		0.00
Amount Recently Paid	-	75.00
TOTAL AMOUNT DUE:		**0.00**

If no longer in business, please notify us in writing.

Review and correct the information shown on this application.

A 25% penalty will be assessed to anyone found operating without a paid local business tax, in addition to any other penalty provided by local ordinance (Sec 8A-176(2)).

A Certificate of Use and/or City Business Tax Receipt may also be required.

To pay online go to https://miamidade.county-taxes.com

To pay by mail, make check payable to:
Miami-Dade County Tax Collector
Business Tax
200 NW 2nd Avenue, 3rd Floor
Miami FL 33128

To pay in person go to:
200 NW 2nd Avenue, 1st Floor
(305) 270-4949
local.businesstax@miamidade.gov

A service fee of not less than $25.00 up to a minimum of 5% will be charged for all returned checks.

↑ RETAIN FOR YOUR RECORDS ↑

↓ DETACH HERE AND RETURN THIS PORTION WITH YOUR PAYMENT ↓

MIAMI-DADE COUNTY - STATE OF FLORIDA
LOCAL BUSINESS TAX
2024 - 2025 APPLICATION
7288649
BUSINESS LOCATION:
335 NW 128TH AVE
MIAMI, FL 33182-1125

OWNER/CORP.
MY LAWN SERVICE GROUP INC
C/O MARCELO A BARNIQUEL, MY LAWN SERVICE GROUP INC
MY LAWN SERVICE GROUP INC
C/O MARCELO A BARNIQUEL
335 NW 128TH AVE
MIAMI, FL 33182-1125

N/A October 07, 2024

RENEWAL
RECEIPT: 7577427
STATE #

7+7577427+2025

Scan to pay

BUS. COMMENCEMENT DATE: 08/26/2019

SEC	TYPE OF BUSINESS
SER-LAW	SERVICE BUSINESS
10	

APPLICATION IS HEREBY MADE FOR A LOCAL BUSINESS TAX RECEIPT OR PERMIT FOR THE BUSINESS PROFESSION OR OCCUPATION DESCRIBED HEREON. I SWEAR THAT THE INFORMATION IS TRUE AND CORRECT.

SIGNATURE REQUIRED — SEE INSTRUCTIONS ABOVE

Please pay only one amount. The amounts due after Sept 30th include penalties per FS 205.053.

If Received By	Oct 31, 2024	Nov 30, 2024	Dec 31, 2024	Jan 31, 2025
Please Pay	$0.00	$0.00	$0.00	$0.00

State of Florida

Department of Agriculture and Consumer Services

Pesticide Certification Office

PESTICIDE DEALER LICENSE

Number: DL4977

EZBRIZZY
17820 SW 174 ST, MIAMI, FL 33187

This is to certify that the Pesticide Dealer named above is licensed to purchase, hold or offer for sale, sell, and distribute restricted use pesticides under the provisions of the Florida Pesticide Law, Chapter 487, F.S.

WILTON SIMPSON
Commissioner of Agriculture

Issue Date: March 4, 2024
Expiration Date: March 31, 2025

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/07/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Danember Diaz
GTF-101 Westchester 8400 NW 30 Terr Doral FL 33122	PHONE (A/C, No, Ext): (305) 835-0499 FAX (A/C, No): 786-220-2336 E-MAIL ADDRESS: ddiaz@goldentrust.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: ASCENDANT COMMERCIAL INS INC	13683
INSURER B: ASCENDANT COMMERCIAL INS INC	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
MY LAWN SERVICE GROUP INC
335 NW 128TH AVE
Doral FL 33182

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC OTHER:	Y	Y	GL-73608-0	08/26/2024	08/26/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 1,000,000
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY	Y	Y	CA-58741-0	11/22/2023	11/22/2024	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 500,000 $ $ $
	[ ] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A					PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Doral club LLC is named as additional insured subject to the policy terms and conditions.

CERTIFICATE HOLDER

City of Opa Locka
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa Locka FL 33054

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Danember Diaz Abreu

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/07/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Risk Transfer Insurance Agency, LLC 47 E. Robinson Street Suite 200 Orlando, FL 32801	**CONTACT NAME:** Admin - 1 (800) 718-7552 Ext.4550 **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:** certs@peopaygo.com
INSURED OCMI III, Inc dba PEOPayGo 225 E Dania Beach Blvd, Suite 120 Dania Beach, FL 33004 United States	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Service American Indemnity Company / 39152 **INSURER B :** **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 93G6PQKF **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N			RT24MWC7470174003	01/01/2024	01/01/2025	X PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) [Y]	N / A					E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
								$ $ $ $ $

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The Officer(s) for OCMI III, Inc. is/are not included under the Workers' Compensation policy listed above as marked "Y".

Coverage provided for all leased employees but not subcontractors of: My Lawn Service Group Inc (Added Effective: 06/20/2024)

CERTIFICATE HOLDER

My Lawn Service Group Inc
335 NW 128 Ave
Miami, FL 33182

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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PROPOSER QUALIFICATIONS

The Proposer MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:
   Name: My Lawn Service, Inc
   Address: 17820 SW 174th St.
   City, State, Zip: Miami, FL 33187 Phone/Fax: 786-776-9282

2. Check One: Corporation (X) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: 5/1993 State in which Incorporated: FL

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization: ____

5. **Name and Title of Principal Officers** **Date Elected:**

Gulseren Lugo Arteaga	7/2024

6. The length of time in business: 31 years

7. The length of time (continuous) in business as a service organization in Florida: 31 years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka RFP during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

COST PROPOSAL SHEET

The cost proposal should include all fixed fees, deliverables, and any other related costs that may arise.

Item Line Description	Unit Cost	Total Cost
Project Mobilization	NA	
List of prices for each type of tree proposed for this project. Includes different sizes, installation, staking, replacement of failing trees, soil preparation and fertilization		NA
List of prices for each type of plant proposed for this project. Includes different sizes, installation, replacement of failing plants, soil preparation and fertilization		NA
Maintenance Services (Six Months of Service After Installation)		
Watering Services	NA	
Supply and Install Mulch (Cubic Feet/Bag)		NA
Supply and Install Different Varitities of Sod (Square Foot)		NA
Supply, Install and Grade Bulk Topsoil (Cubic Yard)		NA
Supply, Install and Grade Non-Bulk Topsoil (50 Pound Bag)		NA

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

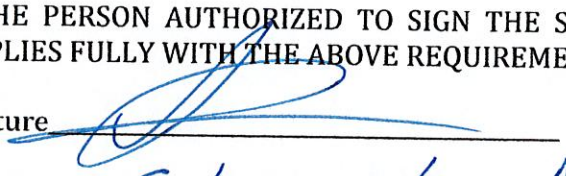
B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature 

Printed Name GULSEREN LUGO ARTEAGA

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by My Lawn Service - Gu/Seren Lugo Arteaga
(Name)

the President
(Title/Position)

of My Lawn Service, Inc
(Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

10/6/24
Date

Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____
Witness

_____
Witness

By: _____
Signature

GUILLERMO LUGO ARTEAGA
Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By: GUILLERMO LUGO ARTEAGA

Title: PRESIDENT

Sworn and subscribed before this 8th day of October, 20 24

Notary Public, State of Florida

ADRIANA GUTIERREZ
Commission # HH 353031
Expires May 24, 2027

Adriana Gutierrez
(Printed Name)

My commission expires: May 24, 2027

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

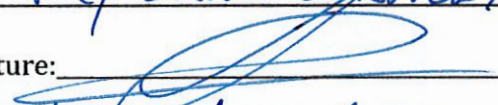
Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: My Lawn Service, Inc

Authorized Signature: 

Print Name: Gulseren Lugo Arteaga

Title: President

Date: 10/6/24

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: GULSEREN LUGO ARTEAGA

Title: PRESIDENT

Sworn and subscribed before me this

7th day of October, 2024

Notary Public
State of Florida at Large

My commission expires:

NOTARY PUBLIC STATE OF FLORIDA

ADRIANA GUTIERREZ
Commission # HH 353031
Expires May 24, 2027

ESTIMATE:

Pervis- Replace 24 tress along medians 25-Gallon

Delivery and installation including steaking of all trees 3 steaks for each tree. 72 steaks

12 Tabebuia trees and 12 crape myrtle trees 25-Gallon each 4 feet clear trunk. Each tree delivered and installed

$750 X 24 =$18,000

From Shahrazad to 151 middle Island

Shrubs for each end at Previs avenue18 large agave 15-Gallon drought tolerant 10 arborical 3-Gallon surrounding. 18 X 250 = $4,500

180 X 25 = $4,500

Very low maintenance.

Shahrazad – Deliver and install 13 fire bush butterfly friendly

3-Gallon at each end.

And 13 clusia at each end all drought tolerant for a total of 29 locations total plants 754 each plant at $30 delivered and installed

754 X ~~35~~ 30 = $26,390 $22,620

Last island Shahrazad main monument deliver and install 40 junipers 3-Gallon as ground cover and 20 arbricolas 3-Gallon10 on each side and juniper in the middle.

60 X 30 = $1,800

Down Town center- Deliver and install 104 -3- Gallon lavender 13 in each planter total 8 planters

104 X 25=$2,600

Service road- Deliver and install 20 yards of 50/50 soil also 25 pallets of Bahia grass. This will be installed in front of homes common areas. Sod

Sod- 700 X 25 = $17,500

Soil- 250 X 20 = $5,000

Opa-lock boulevard- Deliver and install 18 -14feet tall sable palms

800 X18 = $14,400

Ali-baba Ave- Deliver and install 5 thatch palms 25-G along common area

400 X 5 =$2,000

Removed from scope.

Magnolia gardens - Deliver and install 5 Magnolia trees 25-G

700 X 5 =$3,500

Nw 151st -Deliver and install 20 junipers 3-G 20 arborical son each side as ground cover in monument on 151 and 27th Ave

40 X 30 = $1,200

Red classic Mulch 10 pallets each pallet at $700

10 X 700 = $7,000

Watering cycle 3 times a week for 6 months

$15,000

Warranty included for 6 months

Maintenance included of all planted trees, palms, shrubs and grass.

Total $118,890

Subject like: Revised/clarification price proposal

ESTIMATE:

Pervis-Replace 24 trees along medians 25-Gallon Delivery and installation including steaking of new trees and removal of old steaks from existing trees.
all trees 3 steaks for each tree. 72 steaks

12 Tabebuia trees and 12 crape myrtle trees
25-Gallon each 4 feet clear trunk. Each tree delivered and installed $750 X 24 =$18,000
From Shahrazad to 151 middle Island

Total $18,000

Shrubs for each end at Previs avenue18 large agave
15-Gallon drought tolerant 10 arborical 3-Gallon surrounding.
Agave-18 X 250- $4,500 0

Arboricolas -180 X 25 = $4,500

Total $9,000

Shahrazad-Deliver and install 13 fire bush butterfly friendly
3-Gallon at each end
And 13 clusia at each end all drought tolerant for a total of 29 locations total plants 754 each
plant at $30 delivered and installed 754X30 = $22,620
Last island Shahrazad main monument delivers and installs 40 junipers 3-Gallon as ground
cover and 20 arboricolas 3-Gallon10 on each side and juniper in the middle.
60 X 30= $1,800

Total $24,420

Downtown center- Deliver and install 104-3- Gallon lavender 13 in each planter total 8 planters
104 X 25=$2,600

Total $2,600

Service road-Deliver and install 20 yards of 50/50 soil also 25 pallets of Bahia grass. This will be
installed in front of homes common areas.
Sod - 700 X 25 = $17,500
Soil- 250 X 20 =$5,000

Total $22,500

Opa-locka boulevard- Deliver and install 18-14 feet tall sable palms
800 X18= $14,400

Total $14,400

Ali-baba Ave- Deliver and install 5 thatch palms 25-G along common area
400 X 5 =$2,000

Total $2,000

Nw151st-Deliver and install 20 junipers 3-G 20 arborical on each side as ground cover in
monument on 151 and 27th Ave
40 X 30 =$1,200

Total $1,200

Red classic Mulch 10 pallets each pallet at $700
10 X 700 = $7,000

Total $7,000

Watering cycle 3 times a week for 6 months or established $15,000

Total $15,000

Warranty included for 6 months

Maintenance included all planted trees, palms, shrubs and grass.

TOTAL=$116,120

From: Vanezza Rivera
To: Junior Bergel
Subject: RFP 24-1008200 Tree and Plant Installation Services
Date: Thursday, September 19, 2024 2:07:13 PM
Attachments: image001.png
image002.png

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good afternoon,

We have the following preliminary questions for the above referenced solicitation.

1. What is the city's budget for this contract?
2. May we have a copy of the current contract?
3. What color mulch is to be used?
4. Are there aerial photos of the installation areas?
5. Are there existing tree and plants to be replaced?

Thank you,

Vanezza Rivera
Administrative Assistant
vrivera@sfmservices.com
D: 786.602.1343
F : 305.818.3510

Questions and Answers

RFQ 24-1008200
Tree and Plant Installation Services

1. What type of trees and sizes? This will be decided on a case-by-case basis based on soil conditions and needs of the areas. The City is open for suggestions and there's a preference for native vegetation.

2. What type of flowers and sizes? This will be decided on a case-by-case basis there has been a preference established on the RFP for xerox planting and landscape, drought tolerance and low maintenance. The City is open for suggestions and there's a preference for native vegetation.

3. Can the city provide maps with exact location for sod, plants, and trees? This will be decided on a case-by-case basis based on soil conditions and needs of the areas.
4. Who is responsible for all removals and disposal? Selected contractor
5. Is there a budget for this project? $150,000.00
6. Is there irrigation at each location? No.
7. Who is responsible for damages to plant and turf after installation? Selected contractor

Sponsored By: Interim City Manager

RESOLUTION NO. 24-

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA- LOCKA, FLORIDA, ACCEPTING THE PROPOSAL OF SAFA CONSTRUCTION, LLC FOR CAIRO LANE & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT SERVICES, PURSUANT TO ITB NO. 24-1114200 AND FURTHER AUTHORIZING THE INTERIM CITY MANAGER TO ENTER INTO AN AGREEMENT WITH SAFA CONSTRUCTION, LLC FOR SAME, IN AN AMOUNT NOT TO EXCEED FIVE MILLION, FOUR HUNDRED NINE THOUSAND, EIGHT HUNDRED SEVENTY-FOUR DOLLARS ($5,409,874.00) AND IN THE FORM ATTACHED HERETO AS EXHIBIT "A"; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, on September 30, 2024, the City of Opa-Locka ("City") published Invitation to Bid (ITB) 24-1114200 for Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services; and

WHEREAS, two (2) companies submitted proposal documents which were certified by the City Clerk on November 14, 2024;

WHEREAS, the ITB process emphasizes competitive pricing as the main criterion for selecting bidders; and

WHEREAS, after thoroughly evaluating the two bids, staff recommends Safa Construction, LLC ("Safa") for the Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services; and

WHEREAS, this decision was based on Safa's proven track record in executing similar projects and their submission of the lowest responsive project cost; and

WHEREAS, the invitation to bid solicitation document provided detailed specifications for the Project, highlighting the importance of quality and adherence to the Scope of Work; and

WHEREAS, Safa distinguished itself with its comprehensive approach and transparent pricing strategy; and

WHEREAS, Safa Construction, LLC has proposed Five Million, Four Hundred Nine Thousand, Eight Hundred Seventy-Four Dollars ($5,409,874.00) for the Project and the City Commission desires to accept the proposal and further enter into an agreement with Safa Construction, LLC; and

WHEREAS, the City Commission finds that acceptance of Safa Construction, LLC proposal, , attached hereto as Exhibit "A", for Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services and authorizing the Interim City Manager to enter into an agreement with Safa Construction, LLC, attached hereto as Exhibit "B", for same is in the best interest of the City of Opa-Locka and its residents.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA- LOCKA, FLORIDA:

SECTION 1. The recitals to the preamble herein are incorporated by reference.

SECTION 2. The City Commission of the City of Opa-Locka, Florida hereby accepts the proposal of Safa Construction, LLC, , attached hereto as Exhibit "A", relating to Request for Proposals (RFP) 24-1114200, for Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services, and hereby authorizes the Interim City Manager, to enter into the agreement, attached hereto as Exhibit "B", in an amount not to exceed Five Million, Four Hundred Nine Thousand, Eight Hundred Seventy-Four Dollars ($5,409,874.00).

SECTION 3. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the City Manager following review by the City Attorney and without need of public hearing, by filing a corrected copy of same with the City.

SECTION 4. This Resolution shall take effect upon adoption and is subject to the approval of the Governor or Governor's Designee.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

Resolution No. 24-

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____
Commissioner Kelley	_____
Commissioner Williams	_____
Vice Mayor Ervin	_____
Mayor Taylor	_____

City of Opa-locka
Agenda Cover Memo

Department Manager:	Adelina Gross			**Department Manager Signature:**				
Interim City Manager:	Sha'mecca Lawson			**ICM Signature:**				
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**	
				X				
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**	
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		X
Funding Source: *Account#:*	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**	
							X	
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**					
		X	**24-11142000**					
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:**		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*			
	X		**Enhance Organizational** ☐ **Bus. & Economic Dev** ☐ **Public Safety** ■ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐					
Sponsor Name	Interim City Manager		**Department:**		City Manager			

Short Title:

A resolution authorizing the Interim City Manager to accept the proposal of Safa Construction, LLC for Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project pursuant to ITB No. 24-1114200 and further authorizing the Interim City Manager to enter into an agreement with Safa Construction, LLC for said services.

Staff Summary:

Invitation to Bid (ITB) 24-1114200 was published on September 30, 2024, for Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project. Two (2) companies submitted proposal documents which were certified by the City Clerk on November 14, 2024. The ITB process emphasizes competitive pricing as the main criterion for selecting bidders.

After thoroughly evaluating the two bids, staff recommends Safa Construction, LLC for the Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project ITB 24-1114200. This decision was based on Safa's proven track record in executing similar projects and their submission of the lowest responsive

project cost. The invitation to bid provided detailed specifications for the project, highlighting the importance of quality and adherence to the Scope of Work.

Safa Construction distinguished itself with its comprehensive approach and transparent pricing strategy. The firm clearly understood the project requirements and presented a plan for efficient project completion.

Additionally, Safa Construction's past performance in City projects attests to its reliability and expertise. By prioritizing price and proven experience in the ITB process, the City is confident that choosing Safa Construction will lead to high-quality work that aligns with the goals of the Cairo Lane project. This strategic decision ensures that the project is economically viable and will be executed to the highest standards of construction excellence.

Financial Impact: The Cario Lane project is a multi-fund initiative, drawing resources from several funding sources, including ARPA, PTP, Stormwater, and SRF. The approved FY 25 budget for the project totals $5,721,002, initially allocated as $1,955,000 from ARPA, $800,000 from PTP, $250,222 from Stormwater and $2,666,224 from a SRF Loan. Safa Construction submitted a bid of $5,409,874, which is within the allocated FY 25 budget. A significant portion of the funding, $4,534,950, will come from ARPA funds, necessitating a Budget Amendment to reallocate ARPA resources from the originally adopted FY 25 Budget. As a CIP project, this initiative does not have any long-term or ongoing financial impact on the General Fund.

Proposed Action:

Staff recommends the City Commission approve the recommendation for Safa Construction LLC and authorize the Interim City Manager to enter into an agreement with said company.

Attachment:

Bid Certification
RFP 24-1114200
Bid Proposal

CITY OF OPA-LOCKA
CAIRO LANE & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT SERVICES AGREEMENT

THIS IS AN AGREEMENT, dated the_____day of_____, 2024, between:

THE CITY OF OPA-LOCKA, a Florida municipal corporation, hereinafter "CITY"

and

SAFA CONSTRUCTION, LLC., a Florida Limited Liability Company, hereinafter "CONTRACTOR."

WITNESSETH:

In consideration of the mutual terms and conditions, promises, covenants, and payments hereinafter set forth, CITY and CONTRACTOR agree as follows:

ARTICLE 1
PREAMBLE

In order to establish the background, context and form of reference for this Agreement and to generally express the objectives, and intentions, of the respective parties herein, the following statements, representations and explanations shall be accepted as predicates for the undertakings and commitments included within the provisions which follow and may be relied upon by the parties as essential elements of the mutual considerations upon which this Agreement is based.

1.1 CITY is in need of a CONTRACTOR to provide the services for the Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project.

1.2 CONTRACTOR has a strong commitment to provide the services with the necessary experience, qualifications, references, resources, approach and price proposal.

1.3 CITY issued ITB NO. 24-1114200 ("ITB"), seeking a professional company with the knowledge and ability to perform the services sought.

1.4 At its meeting of, November 20, 2024, the CITY evaluated CONTRACTOR to perform the services needed to conduct a Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services and at the City Commission meeting of November 20, 2024, the City Commission selected CONTRACTOR to perform the needed work.

ARTICLE 2
SCOPE OF WORK

2.1 CONTRACTOR shall furnish all the materials, tools, supplies, and labor necessary to perform all of the work described in the Request for Qualifications ITB 24-1114200, a copy of which is attached hereto and specifically made a part of this Agreement as Exhibit "A", and the CONTRACTOR's proposal, attached hereto as Exhibit "B".

2.2 CONTRACTOR shall abide by all specifications outlined in ITB 24-1114200.

2.3 CONTRACTOR hereby represents to CITY, with full knowledge that CITY is relying upon these representations when entering into this Agreement with CONTRACTOR, and that CONTRACTOR has the professional expertise, experience and manpower to perform the services to be provided by CONTRACTOR as set forth in CONTRACTOR's response to ITB.

2.4 CONTRACTOR assumes professional and technical responsibility for performance of its services to be provided hereunder in accordance with applicable recognized professional standards and relevant Florida Statutes.

ARTICLE 3
COMMENCEMENT OF SERVICES

3.1 The CONTRACTOR shall commence work as directed by CITY upon the effective date this Agreement is executed by both parties.

ARTICLE 4
COMPENSATION

4.1 CONTRACTOR will perform the services at a total cost to City of Five Million, Four Hundred Nine Thousand, Eight Hundred Seventy-Four Dollars ($5,409,874.00) for the Cairo Lane & NW 127th Street Drainage, Utilities and Roadway Improvements Project Services.

4.2 CONTRACTOR shall be solely responsible for and shall provide for the payment of workers compensation insurance coverage (with statutory limits and Employer's Liability coverage with limits not less than One Hundred Thousand Dollars ($100,000) (Including Policy Number and Policy Period) and premium, and all other insurance pursuant to Article 5 below, withholding taxes, FICA, pension and profit-sharing contributions, retirement contributions, if any, all remunerations; all labor contract compliance, and all other charges, fees, permits and expenses associated with the employment of such personnel provided by CONTRACTOR hereunder. CITY shall bear no responsibility for any such charge, fees, permits or expenses associated with the employment of such personnel by CONTRACTOR.

4.3 Payment to CONTRACTOR for all tasks and charges under this Agreement shall be based on the following conditions:

A. Disbursements. There are no reimbursable expenses associated with this Agreement.

B. Payment Schedule. Invoices received from CONTRACTOR pursuant to this Agreement will be reviewed by the appropriate financial staff. If services have been rendered in conformity with the Agreement, the invoice will be sent to the City of Opa-locka's Finance Department for payment and may need to be subsequently approved by the State of Florida.

C. Availability of Funds. CITY's performance and obligation to pay under this Agreement is contingent upon an annual appropriation from the CITY.

4.4 The making and acceptance of the final payment shall constitute a waiver of all claims by the CITY. It shall also constitute a waiver of all claims by the CONTRACTOR, except those previously made and still unsettled.

ARTICLE 5
CONTRACTOR'S LIABILITY INSURANCE

5.1 The CONTRACTOR shall not commence work under this contract until it has obtained all insurance required pursuant to the ITB and under this paragraph and such insurance has been approved by the CITY nor shall the CONTRACTOR allow any Subcontractor to commence work on his sub- contract until all similar such insurance required of the subcontractor has been obtained and approved.

5.2 Certificates of insurance, reflecting evidence of the required insurance, shall be filed with the CITY prior to the commencement of the work. These Certificates shall contain a provision that coverage afforded under these policies will not be canceled until at least thirty days (30) prior written notice has been given to the CITY. Policies shall be issued by companies authorized to do business under the laws of the State of Florida.

5.3 Insurance shall be in force until all work required to be performed under the terms of the Contract is satisfactorily completed as evidenced by the formal acceptance by the CITY. In the event the insurance certificate provided indicates that the insurance shall terminate and lapse during the period of this contract, then in that event, the CONTRACTOR shall furnish, at least thirty (30) days prior to the expiration of the date of such insurance, a renewed certificate of insurance as proof that equal and like coverage for the balance of the period of the contract and extension thereunder is in effect. The CONTRACTOR shall not continue to work pursuant to this contract unless all required insurance remains in full force and effect.

5.4 The CONTRACTOR shall hold the CITY, the City of Opa-Locka their agents, and employees, harmless on account of claims for damages to persons, property or premises arising out of the operations to complete this Agreement and name the CITY as an additional insured under their policy.

5.5 The CITY reserves the right to require any other insurance coverage it deems necessary depending upon the exposures.

ARTICLE 6
PROTECTION OF PROPERTY

6.1 At all times during the performance of this Contract, the CONTRACTOR shall protect the CITY's property and properties adjoining the Project site from all damage whatsoever on account of the work being carried on pursuant to this Agreement.

ARTICLE 7
CONTRACTOR'S INDEMNIFICATION

7.1 The CONTRACTOR agrees to release the CITY from and against any and all liability and responsibility in connection with the above-mentioned matters. The CONTRACTOR further agrees not to sue or seek any money or damages from CITY in connection with the above-mentioned matters, except in the event that the CITY fails to pay to CONTRACTOR the fees and costs as provided for in Article 4 herein.

7.2 The CONTRACTOR agrees to indemnify and hold harmless the CITY, its trustees, elected and appointed officers, agents, servants and employees, from and against any and all claims, demands, or causes of action of whatsoever kind or nature, and the resulting losses, costs, expenses, reasonable attorneys' fees, liabilities, damages, orders, judgments, or decrees, sustained by the CITY or any third party arising out of, or by reason of, or resulting from the CONTRACTOR's negligent acts, errors, or omissions.

7.3 If a court of competent jurisdiction holds the CITY liable for certain tortuous acts of its agents, officers, or employees, such liability shall be limited to the extent and limit provided in 768.28, Florida Statutes. This provision shall not be construed as a waiver of any right or defense that the CITY may possess. The CITY specifically reserves all rights as against all claims that may be brought.

ARTICLE 8
INDEPENDENT CONTRACTOR

8.1 This Agreement does not create an employee/employer relationship between the parties. It is the intent of the parties that the CONTRACTOR is an independent contractor under this Agreement and not the CITY's employee for all purposes, including but not limited to, the application of the Fair Labor Standards Act minimum wage and overtime payments, Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, the State Workers Compensation Act, and the State unemployment insurance law. The CONTRACTOR shall retain sole and absolute discretion in the judgment of the manner and means of carrying out the CONTRACTOR's activities and responsibilities hereunder provided. This Agreement shall not be construed as creating any joint employment relationship between the CONTRACTOR and the CITY and the CITY will not be liable for any obligation incurred by CONTRACTOR, including but not limited to unpaid minimum wages and/or overtime premiums.

ARTICLE 9
CONTRACT BOND

9.1 The bond requirements for this Agreement shall be as follows: The Contractor shall provide and maintain performance security covering the faithful performance of the Contract including the corrections after completion and payment of all obligations arising under the Contract in the form of:

1. A performance bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price; and

2. A labor and materials payment bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price.

9.2 The performance bond and the labor and materials payment bond shall be written on a standard bond form, or on a form satisfactory to the City.

9.3 The Contractor shall provide the City with the required performance security before commencement of the Services or the Work.

ARTICLE 10
CHANGES TO SCOPE OF WORK AND ADDITIONAL WORK

10.1 CITY or CONTRACTOR may request changes that would increase, decrease or otherwise modify the Scope of Services/Basic Services to be provided under this Agreement as described in Article 2 of this Agreement. Such changes or additional services must be in accordance with a written amendment, executed by the parties hereto, with the same formality and with equality and dignity prior to any deviation from the terms of this Agreement, including the initiation of any additional or extra work. Each amendment shall at a minimum include the following information on each project:

PROJECT NAME
PROJECT DESCRIPTION
ESTIMATED PROJECT COST
ESTIMATED COST FOR ADDITION OR CHANGE TO PROJECT CONTRACT
ESTIMATED PROJECT COMPLETION DATE

10.2 In no event will the CONTRACTOR be compensated for any work which has not been described in a separate written agreement executed by the parties hereto.

ARTICLE 11
TERM AND TERMINATION

11.1 This Agreement shall commence upon execution of this Agreement and shall be effective for one year.

11.2 This Agreement may be terminated by either party for cause, or the CITY for convenience, upon thirty (30) days written notice by the CITY to CONTRACTOR in which event the CONTRACTOR shall be paid its compensation for services performed to termination date. In the event that the CONTRACTOR abandons this Agreement or causes it to be terminated, he shall indemnify the CITY against any loss pertaining to this termination

up to a maximum of the full contracted fee amount. All finished or unfinished documents, data, studies, plans, surveys, and reports prepared by CONTRACTOR shall become the property of CITY and shall be delivered by CONTRACTOR to CITY.

ARTICLE 12
CONTRACT DOCUMENTS

12.1 CONTRACTOR and CITY hereby agree that the following Specification and Contract Documents, which are attached hereto and made a part thereof, are fully incorporated herein and made a part of this Agreement, as if written herein word for word: this Agreement; ITB 24-1114200, Exhibit "A", and the CONTRACTOR's Response to ITB, attached hereto as Exhibit "B".

ARTICLE 13
MISCELLANEOUS

13.1 Legal Representation. It is acknowledged that each party to this Agreement had the opportunity to be represented by counsel in the preparation of this Agreement and, accordingly, the rule that a contract shall be interpreted strictly against the party preparing same shall not apply due to the joint contribution of both parties.

13.2 Assignments. This Agreement, or any interest herein, shall not be assigned, transferred or otherwise encumbered, under any circumstances, by CONTRACTOR without the prior written consent of CITY. For purposes of this Agreement, any change of ownership of CONTRACTOR shall constitute an assignment which requires CITY approval. However, this Agreement shall run to the CITY and its successors and assigns.

13.3 Records. CONTRACTOR shall keep books and records and require any and all subcontractors to keep books and records as may be necessary in order to record complete and correct entries as to personnel hours charged to this engagement, and any expenses for which CONTRACTOR expects to be reimbursed, if applicable. Such books and records will be available at all reasonable times for examination and audit by CITY and shall be kept for a period of three (3) years after the completion of all work to be performed pursuant to this Agreement. Incomplete or incorrect entries in such books and records will be grounds for disallowance by CITY of any fees or expenses based upon such entries.

CITY is a public agency subject to Chapter 119, Florida Statutes. To the extent CONTRACTOR is acting on behalf of CITY pursuant to Section 119.0701, Florida Statutes, CONTRACTOR shall:

a. Keep and maintain public records that ordinarily and necessarily would be required to be kept and maintained by CITY were CITY performing the services under this agreement;

b. Provide the public with access to such public records on the same terms and conditions that the County would provide the records and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;

c. Ensure that public records that are exempt or that are confidential and exempt from public record requirements are not disclosed except as authorized by law; and

d. Meet all requirements for retaining public records and transfer to CITY, at no cost, all public records in possession of the CONTRACTOR upon termination of this Agreement and destroy any duplicate public records that are exempt or confidential and exempt. All records stored electronically must be provided to the CITY.

e. **IF CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (305) 953-2800, email: jflores@Opalockafl.gov OR BY MAIL: City of Opa-locka – City Clerk's Office, 780 Fisherman Street, Opa-Locka, FL 33054.**

13.4 Ownership of Documents. Reports, surveys, plans, studies and other data provided in connection with this Agreement are and shall remain the property of CITY.

13.5 No Contingent Fees. CONTRACTOR warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONTRACTOR, to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for CONTRACTOR, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. For the breach or violation of this provision, the CITY shall have the right to terminate the Agreement without liability at its discretion, to deduct from the contract price, or otherwise recover the full amount of such fee, commission, percentage, gift or consideration.

13.6 Notice. Whenever any party desires to give notice unto any other party, it must be given by written notice, sent by registered United States mail or national delivery service with verified confirmation. If by mail, with return receipt requested, addressed to the party for whom it is intended and the remaining party, at the places last specified, and the places for giving of notice shall remain such until they shall have been changed by written notice in compliance with the provisions of this section. For the present, the CONTRACTOR and the CITY designate the following as the respective places for giving of notice:

CITY:	Sha'mecca Lawson, Interim City Manager City of Opa-locka Municipal Complex 780 Fisherman Street, Fourth Floor Opa-locka, FL 33054
Copy To:	Burnadette Norris-Weeks, City Attorney Burnadette Norris-Weeks, P.A. 401 North Avenue of the Arts Fort Lauderdale, Florida 33311
Contractor:	Shahinur Rahman Safa Construction, LLC. 11186 SW 17th Manor Davie, FL 33324

Copy To: Registered Agent
Safa Construction, LLC.
11186 SW 17th Manor
Davie, FL 33324

13.7 Binding Authority. Each person signing this Agreement on behalf of either party individually warrants that he or she has full legal power to execute this Agreement on behalf of the party for whom he or she is signing, and to bind and obligate such party with respect to all provisions contained in this Agreement.

13.8 Exhibits. Each Exhibit referred to in this Agreement forms an essential part of this Agreement. The exhibits if not physically attached should be treated as part of this Agreement and are incorporated herein by reference.

13.9 Headings. Headings herein are for convenience of reference only and shall not be considered on any interpretation of this Agreement.

13.10 Severability. If any provision of this Agreement or application thereof to any person or situation shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement, and the application of such provisions to persons or situations other than those as to which it shall have been held invalid or unenforceable shall not be affected thereby, and shall continue in full force and effect, and be enforced to the fullest extent permitted by law.

13.11 Governing Law. This Agreement shall be governed by the laws of the State of Florida with venue lying in Miami-Dade County, Florida.

13.12 Disputes. Any claim, objection, or dispute arising out of the terms of this Agreement shall be litigated in the Eleventh Judicial Circuit Court in and for Miami-Dade County.

13.13 Attorney's Fees. To the extent authorized by law, in the event that either party brings suit for enforcement of this Agreement, the prevailing party shall be entitled to attorney's fees and court costs in addition to any other remedy afforded by law.

13.14 Extent of Agreement. This Agreement together with Contract Documents, attached as an Exhibit hereto, as amended herein above represents the entire and integrated agreement between the CITY and the CONTRACTOR and supersedes all prior negotiations, representations or agreements, either written or oral.

13.15 Waiver. Failure of the CITY to insist upon strict performance of any provision or condition of this Agreement, or to execute any right therein contained, shall not be construed as a waiver or relinquishment for the future of any such provision, condition, or right, but the same shall remain in full force and effect.

13.16 E-Verify. In accordance with Florida Statutes §448.095, the Contractor, prior to commencement of services or payment by the City, will provide to the City proof of participation/enrollment in the E-Verify system of the Department of Homeland Security. Evidence of participation/enrollment will be a printout of the Company's "Company Profile" page from the E-verify system. Failure to be continually enrolled and participating in the E-Verify program will be a breach of contract which will be grounds for immediate termination of the contract by the City. The Contractor will not hire any employee who has not been vetted through

E-Verify. The Contractor may not subcontract any work for the City to any subcontractor that has not provided an affidavit stating that the subcontractor does not employ, contract with or subcontract with an unauthorized alien.

13.17 Scrutinized Companies. Contractor hereby certifies that it: a) has not been placed on the Scrutinized Companies that Boycott Israel List, nor is engaged in a boycott of Israel; b) has not been placed on the Scrutinized Companies with Activities in Sudan List nor the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List; and c) has not been engaged in business operations in Cuba or Syria. If City determined that Contractor has falsely certified facts under this paragraph or if Contractor is found to have been placed on the Scrutinized Companies Lists or is engaged in a boycott of Israel after the execution of this Agreement, City will have all rights and remedies to terminate this Agreement consistent with Section 287.135, Florida Statutes, as amended. The City reserves all rights to waive the certifications required by this paragraph on a case-by-case exception basis pursuant to Section 287.135, Florida Statutes, as amended. City reserves all rights to waive the certifications required by this paragraph on a case-by-case exception basis pursuant to Section 287.135, Florida Statutes, as amended.

Contractor shall not enter into a contract with an entity which would give access to an individual's personal identifying information if: (1) the entity is owned by the government of a foreign country of concern; (2) the government of a foreign country of concern has a controlling interest in the entity; or (3) the entity is organized under the laws or has its principal place of business in a foreign country of concern Section 287.138(2) (a)-(c), Fla. Stat. (2023), under Chapter 2023-33, Laws of Florida.

IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first written above.

City of Opa-Locka

ATTEST:

BY:

Joanna Flores
City Clerk

Sha'mecca Lawson
Interim City Manager

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

Burnadette Norris-Weeks, City Attorney

CONTRACTOR

WITNESSES:

_____

BY:_____
Shahinur Rahman, Manager
Safa Construction, LLC., a Florida
Limited Liability Company

_____

ATTEST:

_____
SECRETARY

STATE OF FLORIDA)
) SS:
COUNTY OF MIAMI-DADE)

BEFORE ME, an officer duly authorized by law to administer oaths and take acknowledgments, personally appeared _____ as _____, of a Florida corporation, and acknowledged executed the foregoing Agreement as the proper official of_____, for the use and purposes mentioned in it and affixed the official seal of the corporation, and that the instrument is the act and deed of that corporation.

IN WITNESS OF THE FOREGOING, I have set my hand and official seal at in the State and County aforesaid on this_____day of_____, 2024.

_____
NOTARY PUBLIC

My Commission Expires:

Cost Comparison/Bid Tabulations Spreadsheet						
Prepared By:	**J. Bergel**					
Date Prepared:	**11/15/2024**					
Requester: Inter. City Manager	**Shamecca Lawson**					
CRITERIA SECTION	[redacted]				**Total Cost**	**Ranking By Total Highest to Lowest Cost**
	Total				**Total Lump Sum**	
VENDOR NAME						
Safa Construction LLC	**$5,409,874.00**				**$5,409,874.00**	**2**
Basile USA LLC	**$6,413,602.89**				**$6,413,602.89**	**1**
Recommendation:						
Safa Construction LLC is the lowest Responsive and Reponsible Bidder.	**$5,409,874.00**					

CITY OF OPA-LOCKA
BID CERTIFICATION

INVITATION TO BID
ITB No. 24-1114200

Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvement Project

I, Joanna Flores, City Clerk of the City of Opa-locka, Florida, do hereby certify that sealed bids were received and opened at the Opa-locka Municipal Complex, 780 Fisherman Street, 4th Floor, Opa-locka, Florida, at 2:33 p.m. this 14th day of November, 2024.

BIDS RECEIVED

	NAME/ADDRESS	TOTAL BASE BID PRICE
1.	**Safa Construction LLC** **11186 SW 17th MNR** **Davie, FL 33324** **Contact: MD Shahimur Rahman, President / CEO** **Tele: 954.326.8295**	**$ 5,409,874.00**
2.	**Basile USA LLC** **3864 SW 30th Avenue** **Fort Lauderdale, FL 33312** **Contact: Luigi Basile, President** **Tel: 954.300.4200 / 305.491.2100** **Email: info@basileusa.com**	**$ 6,413,602.89**

Please note that the bid from SAFA Construction LLC was submitted via DemandStar (e-bid) and provided to the City Clerk's Office by Junior Bergel, City of Opa-locka Procurement Office since the Office of the City Clerk does not have access to DemandStar. The bid submitted by Basile USA LLC was hand delivered to the City Clerk's Office and also submitted via DemandStar (e-bid).

I further certify that bids were submitted and properly opened in the presence of the following:

Junior Bergel
Procurement Officer
City of Opa-locka

Joanna Flores, CMC
City Clerk
City of Opa-locka

CITY OF OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER MAIN SYSTEM
SEPTEMBER 2024

CITY OF OPA LOCKA FLORIDA

UTILITY PROVIDERS

MIAMI DADE WATER & SEWER
MIAMI-MADE WATER & SEWER DEPARTMENT
3575 SOUTH LEJEUNE ROAD
MIAMI, FL 33146
CONTACT: MR. LAZARO GUERRA
PHONE: (786) 268-5273

POWER
FLORIDA POWER & LIGHT
10705 QUAIL ROOST DR.
MIAMI, FL 33157
CONTACT: EDGAR AGUILAR
PHONE: (305) 378-2634

TELEPHONE
AT&T/DISTRIBUTION
6628 LAKESIDE RD
WEST PALM BEACH, FL, 33411
CONTACT: DINO FARRUGGIO
PHONE: (561) 683-2729

STORM DRAINAGE PERMITING
MIAMI DADE COUNTY DEPARTMENT OF
REGULATORY & ECONOMIC RESOURCES
701 NW 1ST COURT
MIAMI, FL 33166
PHONE: (305) 372-6789

GAS
FLORIDA CITY GAS
4045 NW 97TH AVE
DORAL, FL 33178
CONTACT: MR. GUSTAVO PEÑA
PHONE: (305) 835-3618

CABLE
VERIZON
3301 MATRIX DRIVE SUITE 100
RICHARDSON, TX 75082
CONTACT: TODD MARS
PHONE: (786) 236-8597

DESIGN TEAM

CIVIL ENGINEER
300 ENGINEERING GROUP
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FL 33134

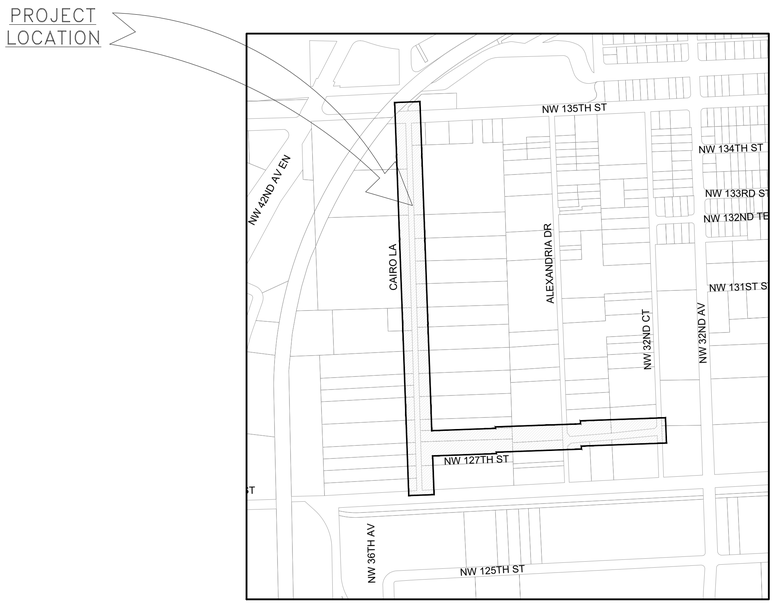
SURVEYOR
BELLO & BELLO LAND SURVEYING CORP.
2230 SW 131ST AVE., SUITE 201
MIAMI, FL 33186

OWNER
CITY OF OPA LOCKA
780 FISHERMAN STREET,
4TH FLOOR OPA-LOCKA, FL 33054

GEOTECHNICAL
UNIVERSAL ENGINEERING SCIENCES
1215 WALLACE DRIVE
DELRAY BEACH, FLORIDA 33444

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S.S.O.C.O.F. DESIGN TICKET No.247005537.
DATE: 09/03/2020



LOCATION PLAN
MIAMI-DADE COUNTY PORTION OF SEC. 35 -
TWP. 51 S. - RGE 42 E.
N.T.S.

COMMUNITY OFFICIALS
VERONICA J. WILLIAMS, MAYOR

JOHN H. TAYLOR JR., VICE MAYOR
DR. SHERELEAN BASS, COMMISSIONER
CHRIS DAVIS, COMMISSIONER
AUDREY DOMINGUEZ, COMMISSIONER

SHEET INDEX

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REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera-Reyes
Digitally signed by Reinaldo J. Rivera-Reyes
DN: C=Reinaldo J. Rivera-Reyes, O="300 Engineering Group, P.A.", L=Coral Gables, ST=Florida, SERIALNUMBER=MA52024060354444, C=US
Date: 2024.09.20 18:00:29-04'00'

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 9/20/24.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Reinaldo J. Rivera, P.E.
Civil Engineer
State of Florida - License No. 83476
2222 Ponce de Leon Blvd, Suite 300
Coral Gables, Florida 33134
(305) 753-2605

300 ENGINEERING GROUP, LLC

AIRIA AUSTIN
PUBLIC WORKS & CIP DIRECTOR
CITY OF OPA-LOCKA PUBLIC WORKS DEPARTMENT
780 FISHERMAN STREET
OPA-LOCKA, FL 33054

BID SET

A.D. SR. PROG. MGR.	D.S.J. ENG. HEAD	R.R. CONST. HEAD	PROJECT No: 20-0324200
DRAWN: R.A.E.	DATE: 9/19/24	SHEET 1	OF 15
FILE NAME: OPA-LOCKA-TASK #4 - COVER - G-01 - WATER SYSTEM_BID SET.DWG		DWG. No.	G-1

GENERAL NOTES

1. THE FOLLOWING UTILITY COMPANIES SHOULD BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION IN AREA:
   - COMCAST CABLE.
   - FLORIDA DEPARTMENT TRANSPORTATION.
   - FPL.
   - AT&T DISTRIBUTION.
   - CROWN CASTLE NG..
   - MIAMI DADE WATER & SEWER.
   - DADE COUNTY-PUBLIC WORKS AND TRAFFIC
   - AT&T COMMUNICATIONS.
   - FLORIDA CITY GAS
   - MCI
2. CONTRACTOR TO NOTIFY SUNSHINE STATE ONE CALL OF FLORIDA INC. BY CALLING 811 AT LEAST 48 HOURS PRIOR TO EXCAVATING.
3. THERE MAY BE OTHER EXISTING UTILITIES IN THE AREA WHICH ARE NOT SHOWN ON THE PLANS. CONTRACTOR IS RESPONSIBLE TO LOCATE ALL UTILITIES BEFORE START CONSTRUCTION.
4. SURVEYING PROVIDED BY BELLO & BELLO LAND SURVEYING CORP. STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.
5. GRADING SHOWN IS ALONG THE PROPOSED PIPE ALIGNMENT.
6. FOR REQUIREMENTS FOR MECHANICAL THRUST RESTRAINT, SEE STANDARD DETAIL GS 2.0
7. ALL PIPE AND FITTINGS INSTALLED UNDER THIS PROJECT MUST BE CLEARLY IDENTIFIED AS A WASTEWATER FORCE MAIN AS REQUIRED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.AND THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES 49.7 MDWASD SHALL USE GREEN PAINT TO IDENTIFY FORCE MAINS. IF PAINT IS APPLYING DURING INSTALLATION OF THE PIPE, THE PAINT SHALL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ON THE TOP OF THE PIPE.
8. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE MDWASD HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES. PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
9. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION, STOP EXCAVATION WORK AND NOTIFY WASD HAZARDOUS MATERIALS MANAGEMENT SECTION AT (786) 552-8400 AND THE CONSTRUCTION CONTRACTS MANAGEMENT DIVISION AT (786) 268-5161. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE ANY OF THE FOLLOWING: 1. ODOR 2. SOLID WASTE DEBRIS 3. SHEEN ON THE GROUNDWATER 4. STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR 5. FREE FLOATING PRODUCT ON THE GROUNDWATER (OIL, DIESEL, GASOLINE, ETC.) MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL.
10. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES. ETC) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRUSION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOO) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62-621.300(4), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING PAVEMENT OUT OF THE WORKING AREA.
13. PAVEMENT RESTORATION TO BE DONE IN ACCORDANCE WITH FDOT AND MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT REQUIREMENTS UNLESS OTHERWISE NOTED.
14. MILLING AND RESURFACING PAVEMENT RESTORATION WILL BE AS SHOWN ON PLANS.
15. THE ENGINEERING OF RECORD IS IN RESPONSIBLE CHARGE FOR THE DESIGN PART OF THIS PROJECT ONLY.
16. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION
17. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE CITY OF OPA LOCKA PUBLIC WORKS DEPARTMENT OR THE ENGINEER OF RECORD
18. THE CONTRACTOR SHALL PROVIDE ACCESS AND ASSISTANCE TO CITY OF OPA-LOCKA INSPECTORS, ENGINEER OF RECORD, OR HIS DESIGNEE TO MAKE INSPECTIONS AS NECESSARY DURING CONSTRUCTION.
19. EXISTING UNDERGROUND UTILITIES ON THE DRAWINGS HAVE BEEN SHOWN BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND THE CITY DO NOT GUARANTEE THE ACCURACY OR THE INCLUSIVENESS OF THIS DATA. THE CONTRACTOR IS REQUIRED TO MARK AND CLEARLY DELINEATE LOCATIONS OF EXISTING UTILITIES WITHIN AREAS OF WORK PRIOR TO EXCAVATION TO AVOID DAMAGE. THE CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO IDENTIFY, LOCATE AND MARK EXISTING UTILITIES BY FIELD VERIFICATION, (E.G. SOFT DIGGING) COORDINATION WITH UTILITY COMPANIES AND ELECTRONIC OR OTHER SUCH DETECTION TECHNOLOGY, AND MEANS AND SHALL BEAR ALL COSTS FOR THIS WORK. THE ENGINEER OF RECORD AND THE CITY SHALL NOT BE HELD LIABLE FOR ANY UTILITY CONFLICTS AND UNKNOWNS THAT ARE DISCOVERED DURING CONSTRUCTION
20. THE CONTRACTOR MUST HAND EXCAVATE AROUND AREAS WHERE EXISTING UNDERGROUND UTILITIES ARE EXPECTED OR SUSPECTED IN ORDER TO AVOID DAMAGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND COSTS TO CORRECT DAMAGES RESULTING FROM FAILURE TO TAKE ALL NECESSARY PRECAUTIONS INCLUDING LOCATING, MARKING AND CAREFUL EXCAVATION. CONTRACTOR SHALL LOCATE ALL SPRINKLERS, ELECTRICAL, SANITATION, STORMWATER, COMMUNICATION, SEWER AND WATER LINES IN AREA OF WORK AND SHALL CUT AND RELOCATE SPRINKLERS AND SPRINKLERS WATER LINES AS NECESSARY TO COMPLETE THE WORK. CONTRACTOR TO REPAIR OR HAVE REPAIRED ANY EXISTING UTILITY LINE DAMAGED DURING WORK. LOCATION OF SPRINKLER LINES AND HEADS WERE NOT PROVIDED TO THE ENGINEER AND THEREFORE ARE NOT SHOWN ON THE PLANS.
21. IF CONTRACTOR IDENTIFIES ANY UTILIY CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER/ENGINEER-OF-RECORD AND THE ASSIGNED CITY OF CORAL GABLES CONSTRUCTION MANAGER SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE CONFLICTS.
22. THE CONTRACTOR SHALL ACCURATELY RECORD THE LOCATION AND ELEVATIONS OF THE PIPE WORK AND EXISTING UTILITIES AND STRUCTURES ENCOUNTERED AND PROVIDE COMPLETE, NEAT AND ORDERLY AS-BUILT DATA PRIOR TO PROJECT CLOSE OUT.
23. THE PIPELINE HORIZONTAL ALIGNMENT IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE PIPE LENGTHS TO MEET THE ALIGNMENT AND TO AVOID CONFLICTS WITH EXISTING UTILITIES.
24. ALL EXISTING UTILITIES, MANHOLE COVERS, ELECTRICAL BOXES, VALVE BOXES, METER BOXES, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO GRADE ELEVATION, UNLESS OTHERWISE NOTED.
25. CONTRACTOR SHALL REPLACE ALL UTILITY BOXES/COVERS DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL NOTE THE CONDITION OF WATER METER BOXES BEFORE STARTING WORK. CONTRACTOR SHALL CONTACT THE CITY OF OPA-LOCKA PUBLIC WORKS DEPARTMENT TO INSPECT METERS AND BOXES AHEAD OF CONSTRUCTION TO DETERMINE WHETHER REPLACEMENT IS NECESSARY. ALL WATER METER BOXES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH COUNTY ISSUED WATER METER BOXES AND PAID FOR BY CONTRACTOR
26. ALL SODDED AREAS, SHRUBBERY, TREES, FENCES, MAILBOXES, DRIVEWAYS AND OTHERS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER
27. DEWATERING PERMIT MUST BE OBTAINED BY THE CONTRACTOR WITH MD RER-DERM.
28. STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.
29. ALL PIPING SHALL BE OF THE SIZE AND MATERIAL SHOWN OR SPECIFIED.
30. CONTRACTOR SHALL PROVIDE TEMPORARY TEST PLUGS AND BULKHEADS OR OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE TESTING OF ALL PIPING.
31. CONTRACTOR SHALL PROVIDE TEMPORARY RESTRAINING FOR EXISTING PIPELINE DURING INSTALLATION OF THE PROPOSED PRESURIZED PIPE.
32. ALL RELATED HARDWARE FOR RESTRAINING RODS TO BE CLASS 316 STAINLESS STEEL
33. VALVES AT INTERSECTIONS, BRANCH MAINS OR STOP OUTS SHALL BE RESTRAINED TO THE ADJACENT FITTING UNLESS OTHERWISE NOTED.
34. CUTTING AND PLUGGING OF EXISTING PIPELINES SHALL BE ACCOMPLISHED BY MECHANICALLY RESTRAINING THE PLUG OR CAP. A MINIMUM OF 20 FEET OF PIPE SHALL BE PROVIDED TO ENSURE THE STABILITY OF THE INSTALLATION.
35. ALL UNDERGROUND PRESSURE PIPE FITTINGS SHALL BE RESTRAINED AS NOTED ON THE DRAWINGS.
36. FOR REQUIREMENTS FOR MECHANICAL THRUST RESTRAINT, SEE WASD STANDARD DETAIL GS 2.0. MECHANICAL JOINT RESTRAINS SHALL BE EBAA IRON SERIES 2000 AND 1600
37. ALL PIPES SHALL BE LAID IN A CLEAN, DRY TRENCH. DEWATERING AS REQUIRED SHALL BE AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATIONS COMPLY WITH OSHA'S EXCAVATION SAFETY STANDARDS AND THE FLORIDA TRENCH SAFETY ACT. DISCHARGE WATER SHALL NOT BE DIRECTED THROUGH THE PIPE BEING LAID. CONTRACTOR SHALL FURNISH THE OWNER WITH WRITTEN ASSURANCE THAT HE WILL COMPLY WITH THESE REGULATIONS
38. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING UNINTERRUPTED WATER SERVICE DURING THE CONSTRUCTION OF THE TIE-IN CONNECTION OF ALL PROPOSED WATER SYSTEMS TO ANY EXISTING WATER SERVICE LINES. ABANDONMENT SHALL NOT OCCUR UNTIL THE PROPOSED WORK HAS BEEN APPROVED AND ACCEPTED FOR OPERATION BY THE ENGINEER OF RECORD AND THE CITY OF OPA-LOCKA WORKS DEPARTMENT. CONTRACTOR SHALL REQUEST FROM CITY OF OPA-LOCKA 48 HOURS PRIOR FOR WATER MAIN SHUTDOWN.
39. PRIOR TO THE SHUTDOWN FOR TIE IN OF ANY WATER, FIRE, SEWER, OR STORMWATER MAINS, THE CITY SHALL PERFORM AN ONSITE INSPECTION TO VERITY: 1) SIZE OF PIPE AND 2) MATERIALS ONSITE. IF THIS INSPECTION DOES NOT OCCUR OR PARTS ARE MISSING, THE SHUTDOWN WILL BE CANCELED. THE CITY CAN, AT ANY TIME, CANCEL SCHEDULED SHUTDOWNS DUE TO INCLEMENT WEATHER EVENTS AND/OR SPECIAL EVENTS.
40. FOR WATER OR FIRE MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 150 PSI FOR TWO (2) HOURS BEFORE TAPPING. FOR SEWER OR STORMWATER MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 100 PSI FOR TWO (2) HOURS BEFORE TAPPING.
41. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.
42. CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE WITH THE FLORIDA DEPARTMENT OF HEALTH (FDOH) FOR THE WATER SAMPLING AND BACTERIOLOGICAL TESTS AND FINAL CERTIFICATION FROM FDOH.
43. EXISTING FIRE HYDRANTS SHALL REMAIN IN SERVICE UNTIL THE NEW MAIN IS PLACED IN SERVICE. ONCE THE NEW MAIN IS IN SERVICE, THE OLD HYDRANT SHALL BE COVERED AND TAGGED WITH A SIGN INDICATING "OUT OF SERVICE" UNTIL IT IS REMOVED BY THE CONTRACTOR.
44. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE CITY OF OPA-LOCKA HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE OWNER/CITY.
45. CONTRACTOR TO PROVIDE A STORMWATER POLLUTION PREVENTION PLAN FOR APPROVAL PRIOR COMMENCING CONSTRUCTION WORK. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS. ALL INLETS AND DRAINS SHALL BE PROTECTED AND MUST BE MAINTAINED FREE OF DEBRIS AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRUSION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.
46. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION, STOP EXCAVATION WORK AND NOTIFY THE CITY OF OPA-LOCKA. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE ANY OF THE FOLLOWING: 1. ODOR 2. SOLID WASTE DEBRIS 3. SHEEN ON THE GROUNDWATER 4. STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR 5. FREE FLOATING PRODUCT ON THE GROUNDWATER (OIL, DIESEL, GASOLINE, ETC.) MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL.
47. PAVEMENT RESTORATION LIMITS ARE AS INDICATED IN THE DRAWINGS. PAVEMENT RESTORATION IS TO BE DONE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION AND MIAMI DADE COUNTY SPECIFICATIONS UNLESS OTHERWISE NOTED.
48. ALL ASPHALT/CONCRETE SHALL BE SAW CUT TO ENSURE CLEAN EDGES.
49. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOI) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62-621.300(4),A MULTI-SECTOR GENERIC PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY (MSGP) AND A NOTICE OF INTENT (NOI) TO USE SAID MULTI-SECTOR GENERIC PERMIT AS PROVIDED IN SUBSECTION 62-621.300(5), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
50. ONLY MATERIALS AND EQUIPMENTS THAT ARE REQUIRED TO BE USED UNDER THIS CONTRACT WILL BE ALLOWED ON THE PROJECT PREMISES.
51. SOD AND/OR MULCH SHALL BE INSTALLED AND MAINTAINED ON EXPOSED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADE, AND AT OTHER TIMES AS SOD AND/OR MULCH SHALL BE INSTALLED AND MAINTAINED ON EXPOSED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADE, AND AT OTHER TIMES AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGE INTO ADJACENT WATER BODIES OR DRAINAGE SYSTEMS. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL SEDIMENTATION AND/OR TURBIDITY. SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL SHALL BE UTILIZED DURING CONSTRUCTION.
52. CONTRACTOR SHALL INCLUDE ALL MEANS & METHODS NECESSARY TO FACILITATE CONSTRUCTION OF COMPLETE WATER, STORMWATER, SEWER AND ROADWAY IMPROVEMENTS. THESE SHALL INCLUDE ALL MEANS & METHODS NECESSARY TO FACILITATE CONSTRUCTION OF COMPLETE INFRASTRUCTURE INSTALLATION AND SHALL INCLUDE, BUT NOT LIMITED TO: SHEET PILINGS, TRENCH BOXES, STEEL PLATES AND CONCRETE BARRIER WALLS AS NECESSARY TO PROTECT THE INTEGRITY OF THE WORK SITE, THE CONTRACTOR AND THE PUBLIC.
53. IF SHEET PILINGS ARE REQUIRED FOR EXCAVATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED ENGINEER.
54. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF MAINTENANCE OF TRAFFIC DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE PERMITTING AGENCIES.
55. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL DURING CONSTRUCTION AND FOR ANY NECESSARY TEMPORARY TRAFFIC DIVERSIONS DURING CONSTRUCTION.
56. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL REQUIRED CLOSEOUT DOCUMENTATION HAS BEEN SUBMITTED AS REQUIRED BY THE CONTRACT DOCUMENTS AND CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT. AS PART OF CLOSEOUT, AS-BUILT DRAWINGS IN ACCORDANCE WITH CITY OF MIAMI BEACH PUBLIC WORKS MANUAL SECTION 8 SHALL BE PROVIDED.
57. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED SURVEYOR TO COMPLETE AS-BUILT DRAWINGS FOR THE PROJECT.
58. WHEN POWER POLES ARE ADJACENT TO ANY PROPOSED UTILITY, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION. THE SHORING AND SUPPORT METHODS SHALL BE APPROVED BY THE UTILITY COMPANY ENGINEERING DEPARTMENT. THE COST OF SHORING WILL BE INCLUDED IN THE OVERALL PROJECT COST.
59. PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONGSIDE OF AND OVER ALL UTILITIES. THE CITY REQUIRES THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COST OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CITY. IF RESULTS OF TESTS TAKEN DURING THE PROGRESS OF THE WORK INDICATE COMPACTED MATERIALS DO NOT MEET SPECIFIED REQUIREMENTS, SUCH DEFECTIVE WORK WILL BE REMOVED, REPLACED, AND RE-TESTED AS DIRECTED BY THE ENGINEER AND AT THE CONTRACTOR'S SOLE EXPENSE.
60. PLANS ARE SUBJECT TO REVISION PENDING THE OUTCOME OF ONGOING PERMITTING EFFORTS. ANY CHANGES REQUIRED BY PERMITTING APPROVALS OR AGENCIES WILL BE INCORPORATED INTO THE CONFORMED SET OF DRAWINGS AS NECESSARY.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 9/20/24.

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DATE: 09/03/2020

CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM
CAIRO

GENERAL PLAN & NOTES

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
PERMIT SET	X	01/19/23	A.D
BID SET	X	09/18/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - COVER - G-01 - WATER SYSTEM_BID SETDWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET G-2
DRAWING No. 2 OF 15

RER–DERM NOTES ON WATER–SEWER INSTALLATION

1. A HORIZONTAL DISTANCE OF AT LEAST 6 FEET, AND PREFERABLY 10 FEET (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE SEWER PIPES AND WATER PIPES. THE MINIMUM HORIZONTAL SEPARATION CAN BE REDUCED TO 3 FEET FOR VACUUM–TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE TOP OF THE SEWER PIPE IS AT LEAST 6 INCHES BELOW THE BOTTOM OF THE WATER PIPE. WHEN THE ABOVE SPECIFIED HORIZONTAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF:
   A– THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
   B– THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.
   C– THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER PIPE.

2. A VERTICAL DISTANCE OF AT LEAST 12 INCHES (OUTSIDE TO OUTSIDE) SHALL BE MAINTAINED BETWEEN ANY WATER AND SEWER MAINS WITH SEWER PIPES PREFERABLY CROSSING UNDER WATER MAINS. THE MINIMUM VERTICAL SEPARATION CAN BE REDUCED TO 6 INCHES FOR VACUUM–TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE SEWER PIPE IS BELOW THE WATER MAIN. THE CROSSING SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 6 FEET FROM ALL JOINTS IN GRAVITY AND PRESSURE SEWER PIPES. THE DISTANCE CAN BE REDUCED TO 3 FEET FOR VACUUM–TYPE SEWERS, WHEN THE ABOVE SPECIFIED VERTICAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF:
   A– THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
   B– THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.

3. IN HIGHLY CONGESTED AREAS, WHERE EITHER WATER OR SEWER FACILITIES ARE EXISTING AND THE SEPARATION REQUIREMENTS CANNOT BE MET, SPECIAL CONSIDERATION MAY BE GIVEN SUBJECT TO SUBMITTAL OF DOCUMENTATION SHOWING THAT THE PROPOSED ALTERNATIVE WILL RESULT IN AN EQUIVALENT LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION.

4. THE MAXIMUM ALLOWABLE EXFILTRATION RATE OF GRAVITY SANITARY SEWERS CONSTRUCTED IN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE FIFTY (50) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY FOR RESIDENTIAL LAND USE AND TWENTY (20) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY FOR NON–RESIDENTIAL LAND USE.

5. FORCE MAIN SEWERS CONSTRUCTED IN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE EITHER DUCTILE IRON OR REINFORCED CONCRETE PRESSURE SEWER PIPES.
   FOR DUCTILE IRON PIPE EXFILTRATION RATE SHALL NOT BE GREATER THAN THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AMERICAN WATER WORKS ASSOCIATION STANDARD (AWWAS) C600–82 AT TEST A PRESSURE OF 100 PSI.
   FOR REINFORCED CONCRETE PRESSURE SANITARY SEWER EXFILTRATION RATE SHALL NOT BE GREATER THAN HALF (½) THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AWWA C600–82 AT A TEST PRESSURE OF 100 PSI.

6. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, AND CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

7. ALL OTHER PUBLIC OR PRIVATE UTILITY FACILITIES SHALL BE CONSTRUCTED AT LEAST 5 FEET FROM ANY WATER AND SEWER MAIN AS MEASURED FROM THE OUTSIDE BELL OF THE WATER OF THE UTILITY PIPE.

8. WHEN THE 5 FEET SEPARATION BETWEEN PROPOSED AND EXISTING LINE IS NOT POSSIBLE, THE CONTRACTOR SHALL HAND DIG OR EXPOSE THE WATER AND SEWER PIPES BEFORE PROCEEDING WITH POWER EQUIPMENT EXCAVATION.–

9. IN NO CASE SHALL A CONTRACTOR INSTALL UTILITY PIPES, CONDUITS, CABLES, ETC. IN THE SAME TRENCH PARALLEL AND ABOVE AN EXISTING WATER OR SEWER PIPE EXCEPT WHERE THEY CROSS. ANY DEVIATION FROM NOTES 6, 7 AND 8 SHALL BE APPROVED IN WRITING BY THE RESPONSIBLE WATER AND SEWER UTILITY.

10. A NON–RESETTABLE ELAPSED TIME METER SHALL BE INSTALLED AT EACH PUMP TO RECORD THE TOTAL NUMBER OF OPERATING HOURS OF THE STATION.

11. IF ANY AREA OF THE WORK SITE IS FOUND TO CONTAIN BURIED SOLID WASTE AND / OR GROUND OR GROUND WATER CONTAMINATION, THE FOLLOWING SHALL APPLY:

    a) ALL WORK IN THE AREA SHALL FOLLOW ALL APPLICABLE SAFETY REQUIREMENTS (E.G., OSHA, ETC.) AND NOTIFICATION MUST BE PROVIDED TO THE APPROPRIATE AGENCIES.

    b) IMMEDIATELY NOTIFY THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION (EMRD). THE EMRD CAN BE CONTACTED AT (305) 372–6700.

    c) IF CONTAMINATED SOILS AND/OR BURIED SOLID WASTE MATERIAL IS EXCABATED DURING CONSTRUCTION, THEN THEY REQUIRE PROPER HANDLING AND DISPOSAL IN ACCORDANCE WITH THE LOCAL, STATE AND FEDERAL REGULATIONS, BE ADVISED THAT THE LANDFILL OWNER/OPERATOR IS THE FINAL AUTHORITY ON DISPOSAL AND MAY HAVE REQUIREMENTS BEYOND THOSE PROVIDED BY HEREIN. IF DISPOSAL WITHIN A MIAMI–DADE COUNTY OWNED LANDFILL (CLASS I LANDFILL) IS APPROPRIATE AND SELECTED, PLEASE CONTACT THE MIAMI–DADE COUNTY DEPARTMENT OF PUBLIC WORKS AND WASTE MANAGEMENT AT (305) 594–1670 FOR INFORMATION.

    d) THE REUSE OF CONTAMINATED SOLIDS THAT ARE NOT RETURNED TO THE ORIGINAL EXCAVATION REQUIRES PRIOR APPROVAL OF A SOIL MANAGEMENT PLAN FROM THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION. THE EMRD CAN BE CONTACTED A T (305) 372–6700.

WATER MAIN INSTALLATION CONTAMINATION NOTES

1. PORTIONS OF THE PROPOSED WATER SYSTEM IMPROVEMENTS WILL TRAVERSE THROUGH A CONTAMINATED AREA; ACCORDINGLY, FROM STATION 50+00.00 TO STATION 67+00. THE FOLLOWING MEASURES SHALL BE IMPLEMENTED:
   1.1. ALL JOINTS SHALL BE EQUIPPED WITH VITON ® GASKETS.
   1.2. LINE THE TRENCH WITH IMPERMEABLE MEMBRANE.
   1.3. ONLY CLEAN UNCONTAMINATED SOIL SHALL BE USED FOR BACKFILL; ANY CONTAMINATED SOILS SHALL BE PROPERLY DISPOSED OF

2. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION OUTSIDE THE AREA INDICATED ABOVE, STOP EXCAVATION WORK AND NOTIFY THE CITY. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE THE FOLLOWING: ODOR, SOLID WASTE, SHEEN ON THE GROUNDWATER, STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR FREE FLOATING PRODUCT ON THE GROUND WATER (OIL, DIESEL, GASOLINE, ETC). MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL.

MIAMI–DADE WATER AND SEWER DEPARTMENT DESIGN AND CONSTRUCTION STANDARD DETAILS

FOR	SEE DETAIL	SHEET
TYPICAL TIE–ROD DETAILS	GS 1.0	1 OF 1
DETAILS FOR PVC WATER AND FORCE MAIN	GS 1.9	2 OF 2
STANDARD REQUIREMENTS FOR WATER & SEWER MECHANICAL THRUST RESTRAINT	GS 2.0	1 OF 1
ABBREVIATIONS FOR DEPARTMENT'S PROJECTS	A 10.0	1, 2 & 3 OF 3
STANDARD REQUIREMENTS FOR WATER AND SEWER CONSTRUCTION	GS 0.5	1 OF 2
POTABLE WATER MAIN, WASTEWATER & STORM SEWER CONFLICT	GS 1.5	1 OF 2
TYPICAL TAPPING VALVE SETTING (16" AND SMALLER)	G.S 1.7	1 OF 1
TAPPING SLEEVE AND VALVE INSTALLATION	GS 1.8	1 OF 1
TYPICAL GATE VALVE SETTING (SMALLER THAN 16")	WS 1.0	1 OF 1
MANUAL AIR RELEASE VALVE	WS 1.60	1 OF 1
TYPICAL 2" SERVICE CONNECTION	WS 2.16	4 OF 4
NO. 2 C.I. VALVE BOX AND LID	WS 3.10	1 OF 1
TYPICAL CONNECTION TO EXISTING MAIN	WS 4.12	1 OF 2
TYPICAL FIRE HYDRANT INSTALLATION WITH GUARD POSTS	WS 4.50	1 OF 2

NOTES:

1. THE ABOVE LIST SHALL NOT BE CONSIDERED AS NECESSARILY COMPLETE, NOR SHALL THE STANDARD DETAILS WHICH MAY BE INCLUDED ELSEWHERE HEREIN BE CONSIDERED AS FORMING A COMPLETE LISTING OF ALL STANDARD DETAILS WHICH MAY APPLY TO THIS PROJECT.
2. ALL STANDARD DETAILS ARE INCORPORATED IN THE ABOVE LIST BY REFERENCE AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE MDWASD STANDARD DETAILS.

LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- G. — Exist. Gas
- ℄ — Center Line
- ℄ — Base Line
- ℄&℄ — Center Line And Base Line
- M — Monument Line
- S — Section Line
- R/W — Right Of Way Line
- P — Property Line
- TEL — Exist. Telephone
- U/G — Exist. Electric Underground
- CATV — Exist. Cable Underground
- Exist. Chainlink Fence
- REQ'D. — Required
- O/S — Offset
- D.I. — Ductile Iron
- REST. J. — Restrained Joint
- Exist. Guy Wire Anchor
- Exist. Street Light Pole
- Exist. Utility Conc. Pole
- Exist. Utility Pole
- Exist. Flood Light
- Exist. Traffic Light Pole
- Exist. Pedestrian Crossing Light
- E — Exist. Electric Box
- LT — Exist. Street Light Box
- T — Exist. Telephone Box
- TR — Exist. Traffic Signal Box
- TV — Exist. Cable TV Box
- Exist. C.B.
- E — Exist. Electric MH
- SS — Exist. Storm MH
- S — Exist. Sanitary MH
- T — Exist. Telephone MH
- W — Exist. Water MH
- Exist. Well
- Exist. Sprinkler
- Exist. Fire Hydrant
- Exist. Valve
- Core Boring
- Exist. Sign
- W — Exist. Single Water Meter
- W — Prop. Single Water Meter
- WW — Prop. Dual Water Meter
- Limits of Milling and Resurfacing Pavement Restoration
- Limits of Brick Restoration
- Exist. Tree
- Exist. Palm
- Exist. Hedge
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Exist. Catch Basin
- Exist. Storm Pipe

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM

NOTES AND LEGEND

DRAWING HISTORY

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(305) 753–2605

PROJECT No: 19–00098
PCTS No:
FILE NAME: OPA–LOCKA–TASK #4 – COVER – G–01 – WATER SYSTEM_BID SETDWG
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SHEET G–3

DRAWING No. 3 OF 15



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM

KEY PLAN WATER SYSTEM

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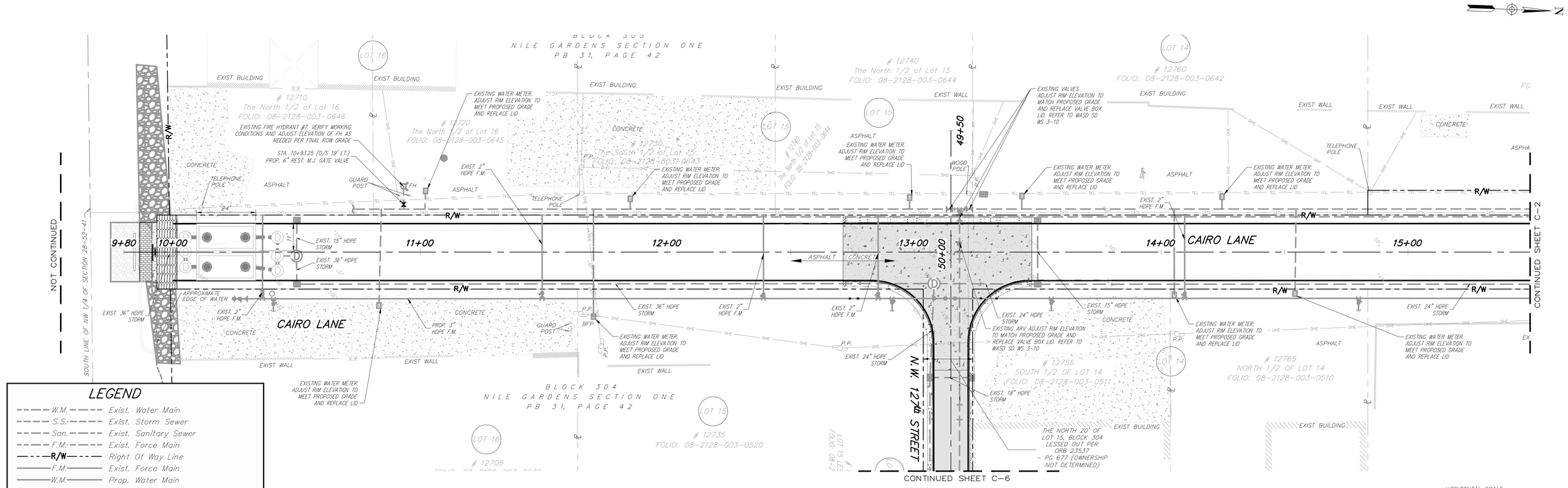
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FILE NAME: OPA-LOCKA-TASK #4 - OTHER - G-01 - WATER SYSTEM_BID SETDWG

DATE: 9/19/24 | SCALE: AS SHOWN

SHEET
G-4

DRAWING No.
4 OF 15

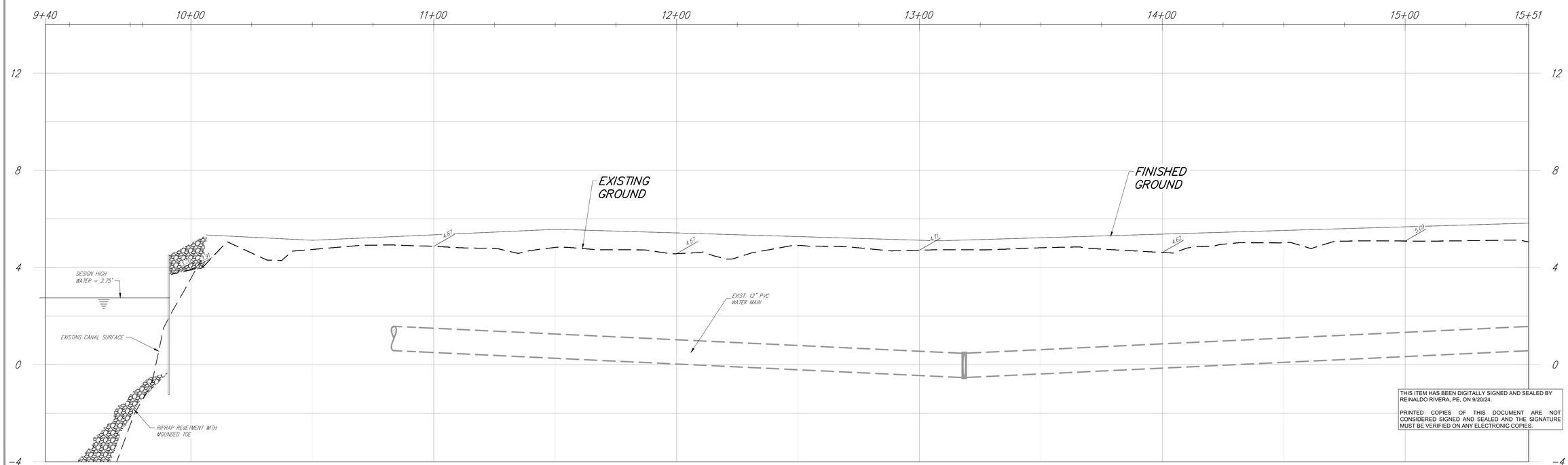


LEGEND

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- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
- F.M. — Exist. Force Main
- W.M. — Prop. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Exist. Catch Basin
- Exist. Storm Pipe

HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

NOTE:
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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS WATER SYSTEM

PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

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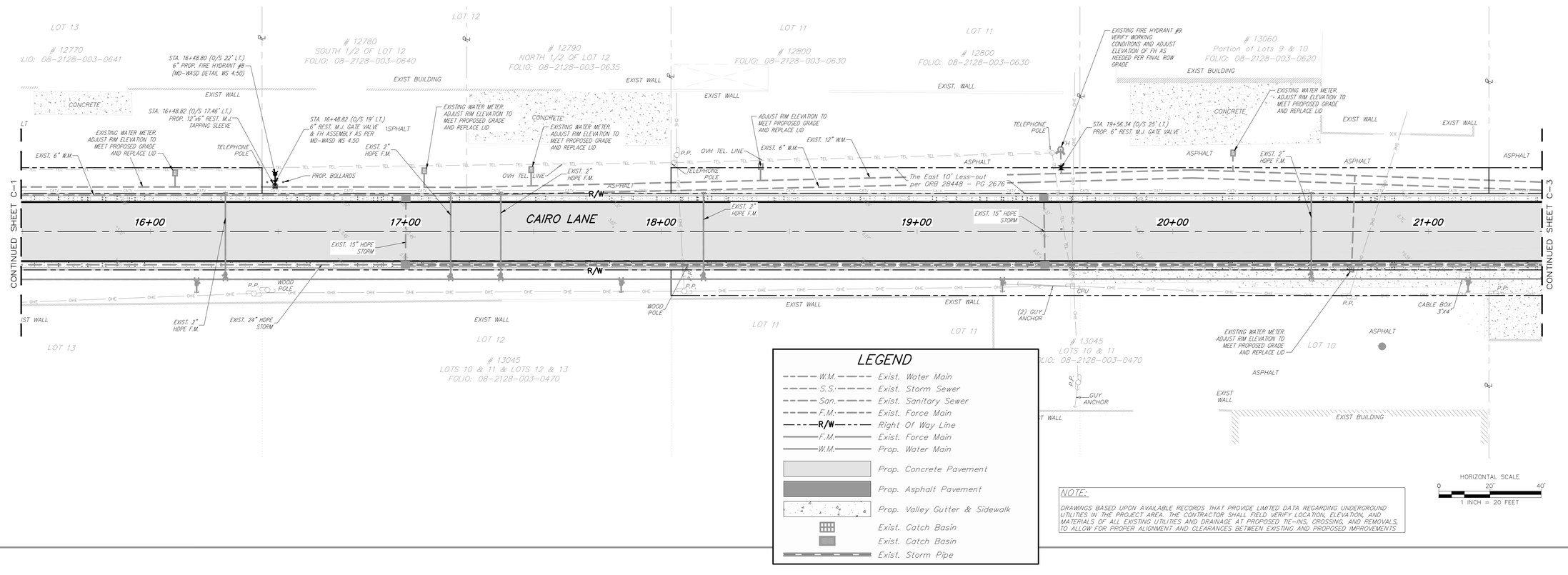
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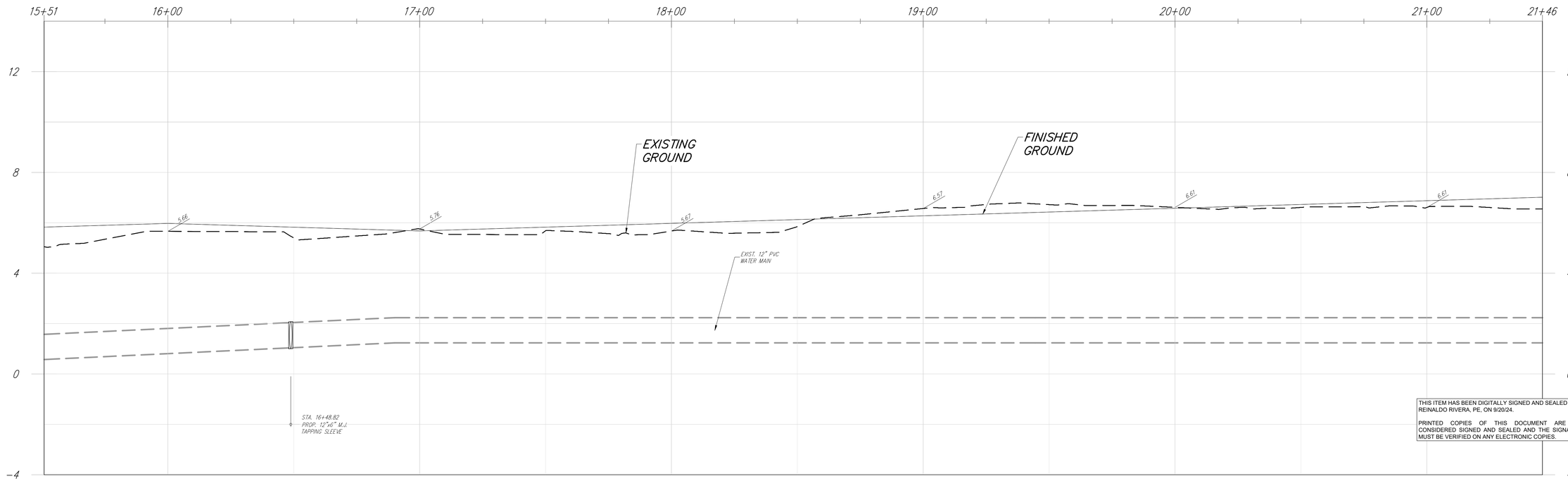
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PROJECT No: 19-00098
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FILE NAME: OPA-LOCKA-TASK #4 - WATER MAIN.DWG
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SHEET
C-1

DRAWING No.
5 OF 15





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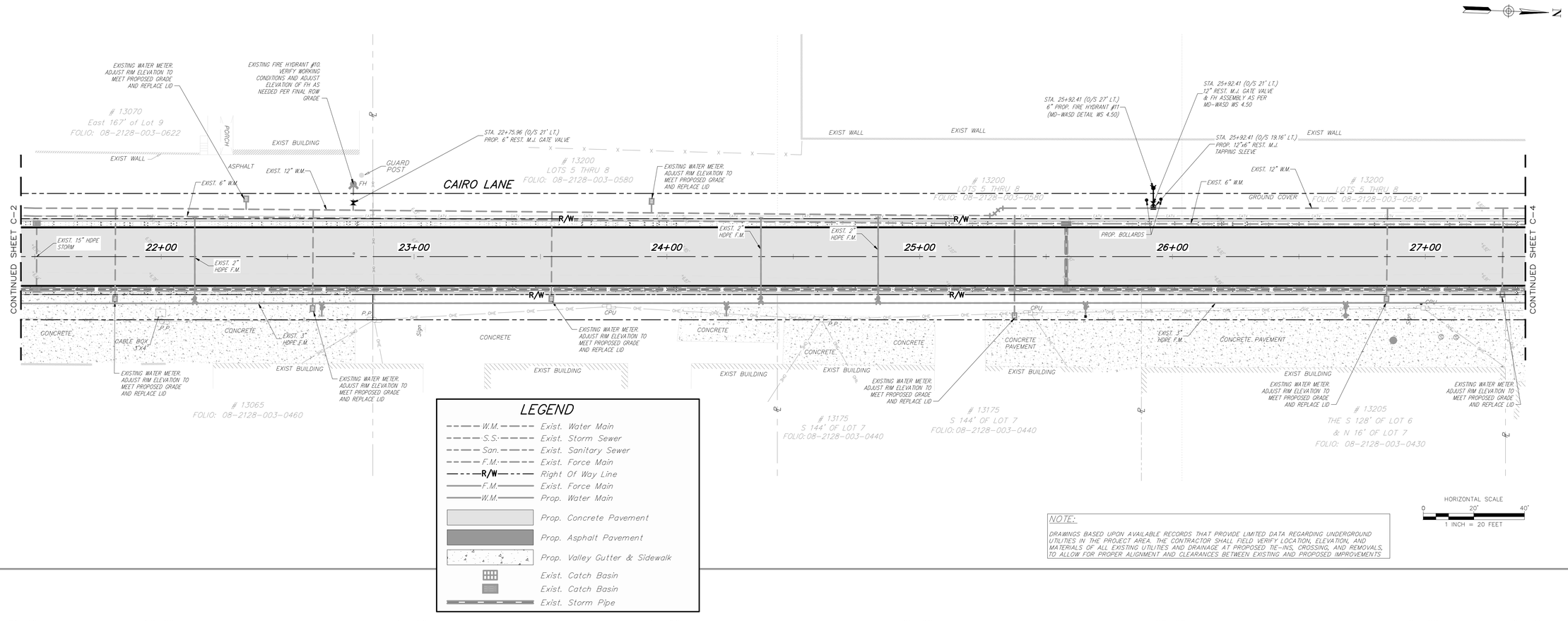
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DRAWING No. 6 OF 15



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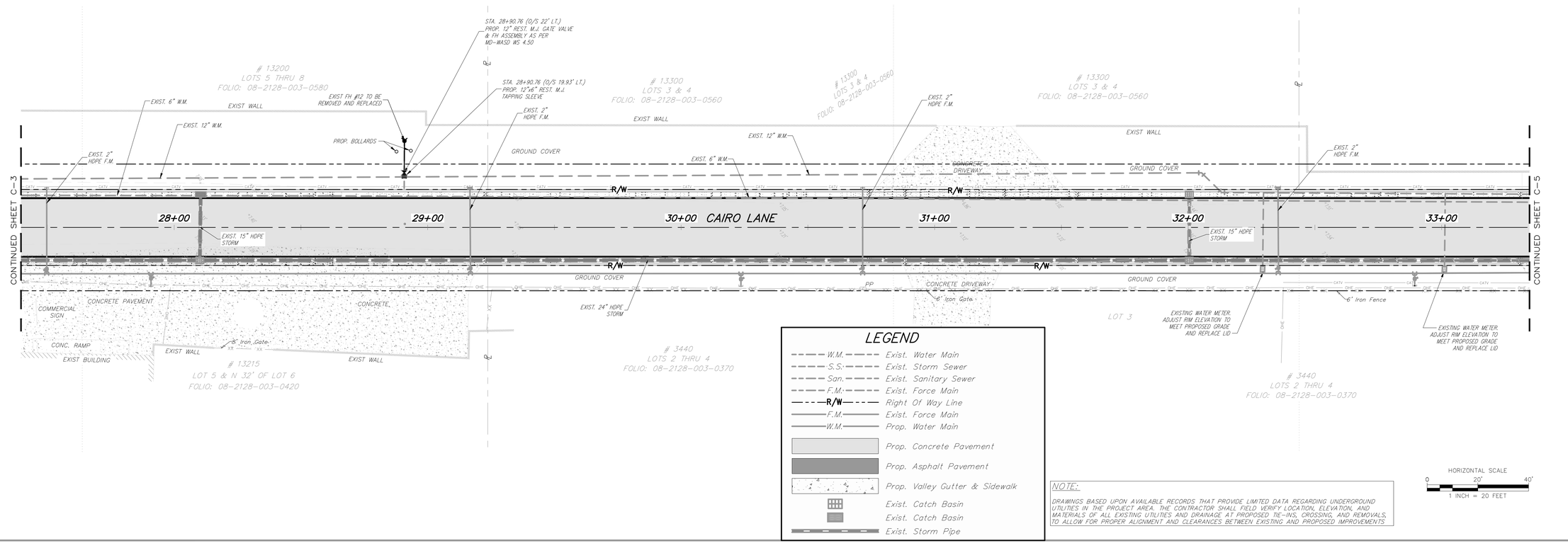
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SHEET C-3

DRAWING No. 7 OF 15



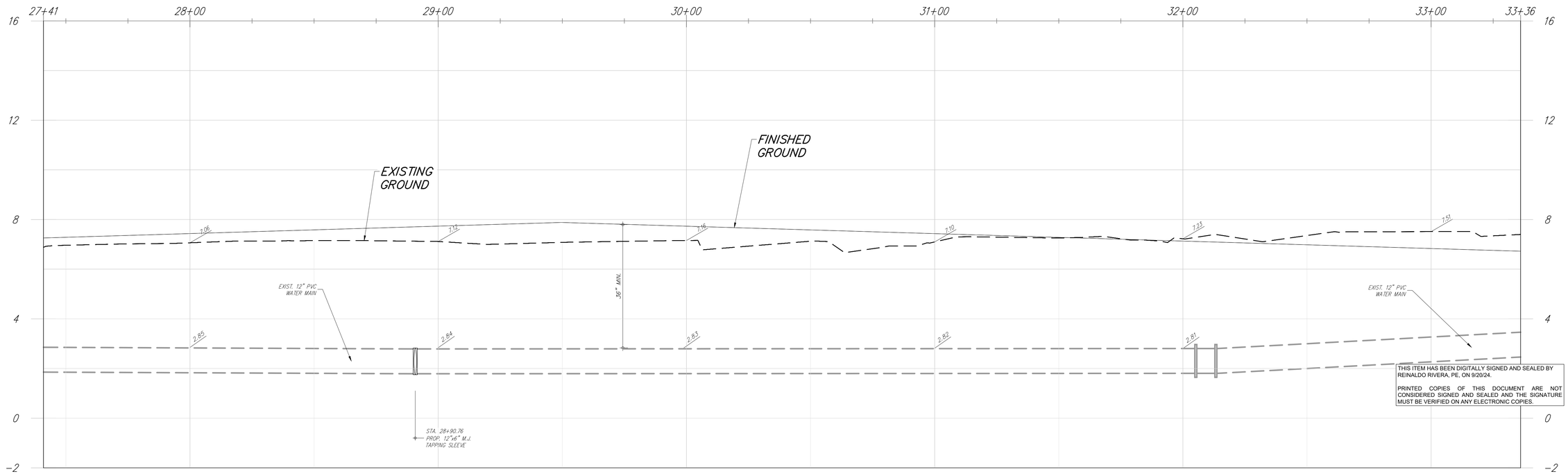
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HORIZONTAL SCALE
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1 INCH = 20 FEET



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WATER SYSTEM
PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

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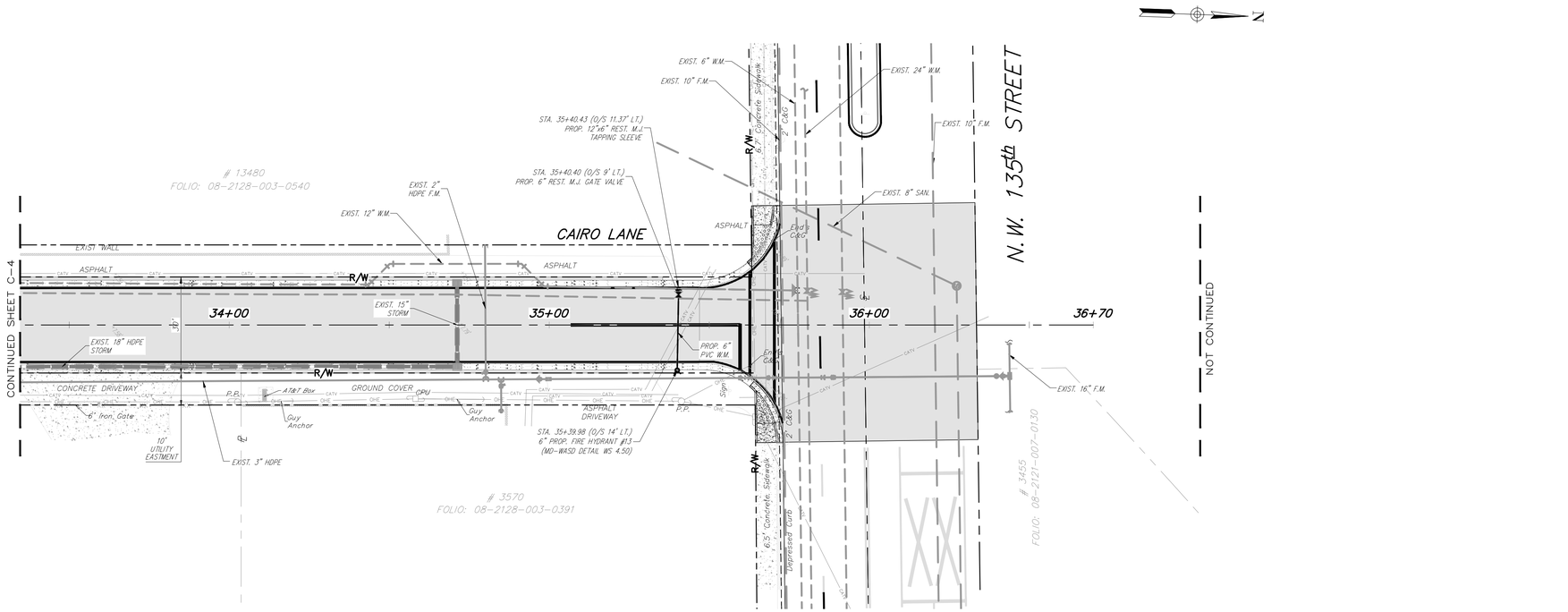
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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - WATER MAIN.DWG
DATE: 9/19/24 | SCALE: AS SHOWN

SHEET
C-4

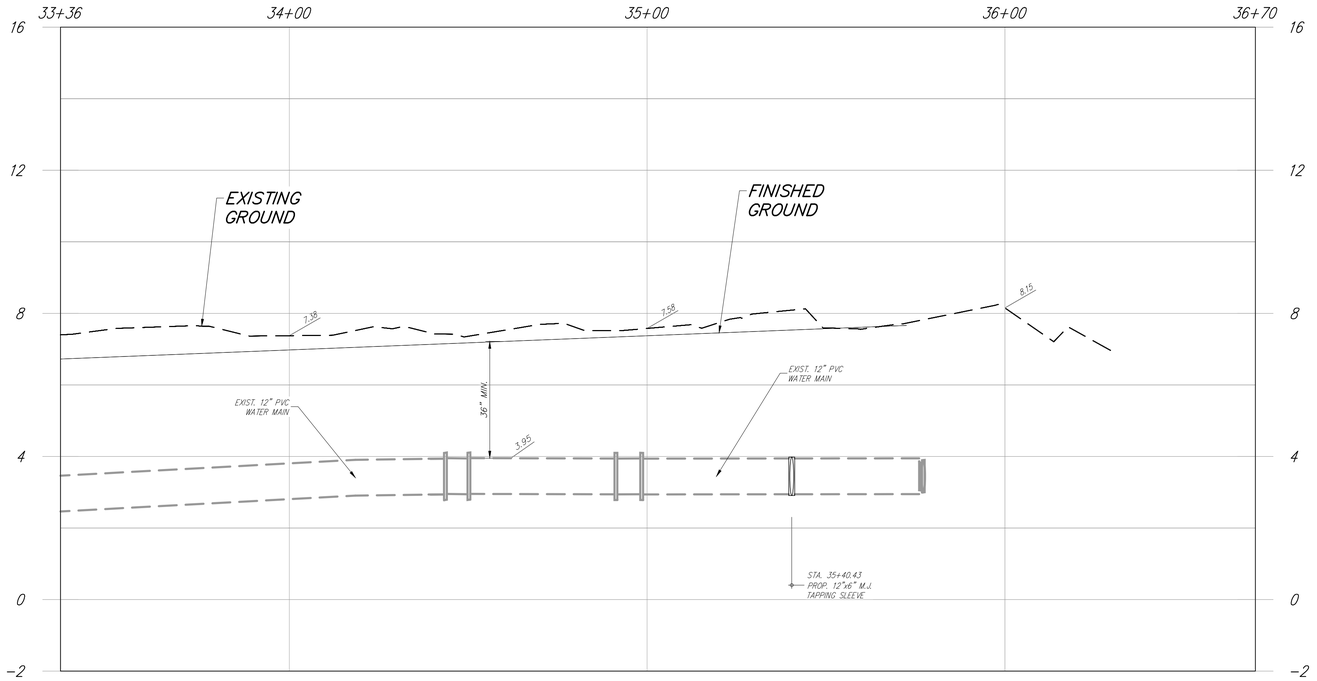
DRAWING No.
8 OF 15



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

NOTE:

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LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
- F.M. — Exist. Force Main
- W.M. — Prop. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Exist. Catch Basin
- Exist. Storm Pipe

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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM
PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
PERMIT SET	X	01/19/23	A.D
BID SET	X	09/18/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

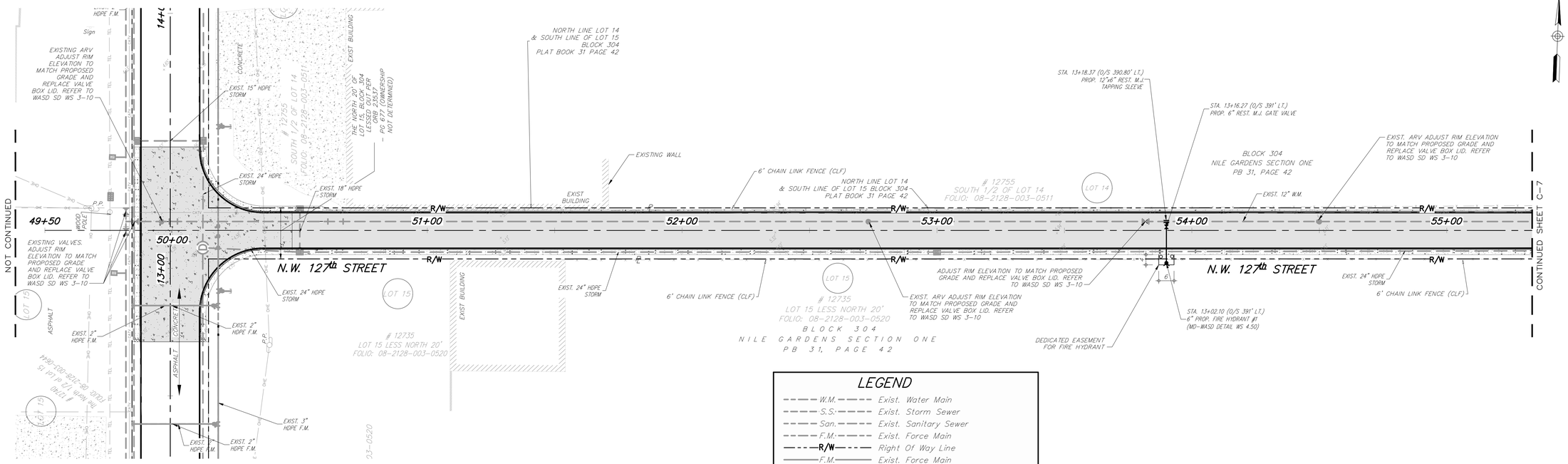
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
State of Florida – License No. 83476
3850 Bird Rd. Suite 601
Miami, Florida 33146
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - WATER MAIN.DWG
DATE: 9/19/24 | SCALE: AS SHOWN

SHEET
C-5

DRAWING No.
9 OF 15



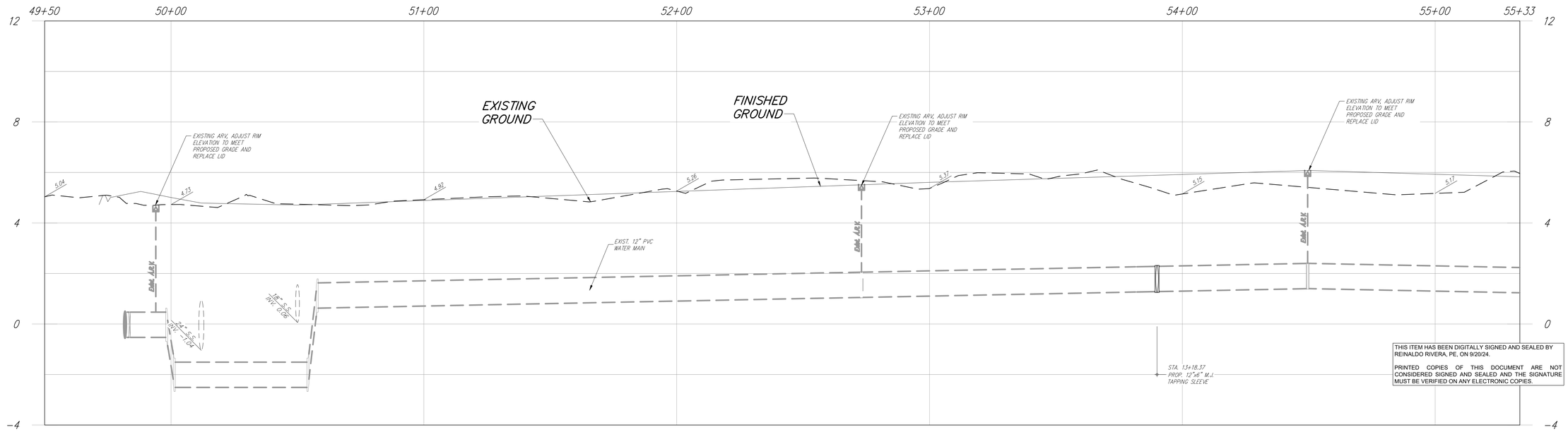
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HORIZONTAL SCALE
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1 INCH = 20 FEET



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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS WATER SYSTEM

PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

DRAWING HISTORY

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30%			
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90%	X	12/16/22	A.D
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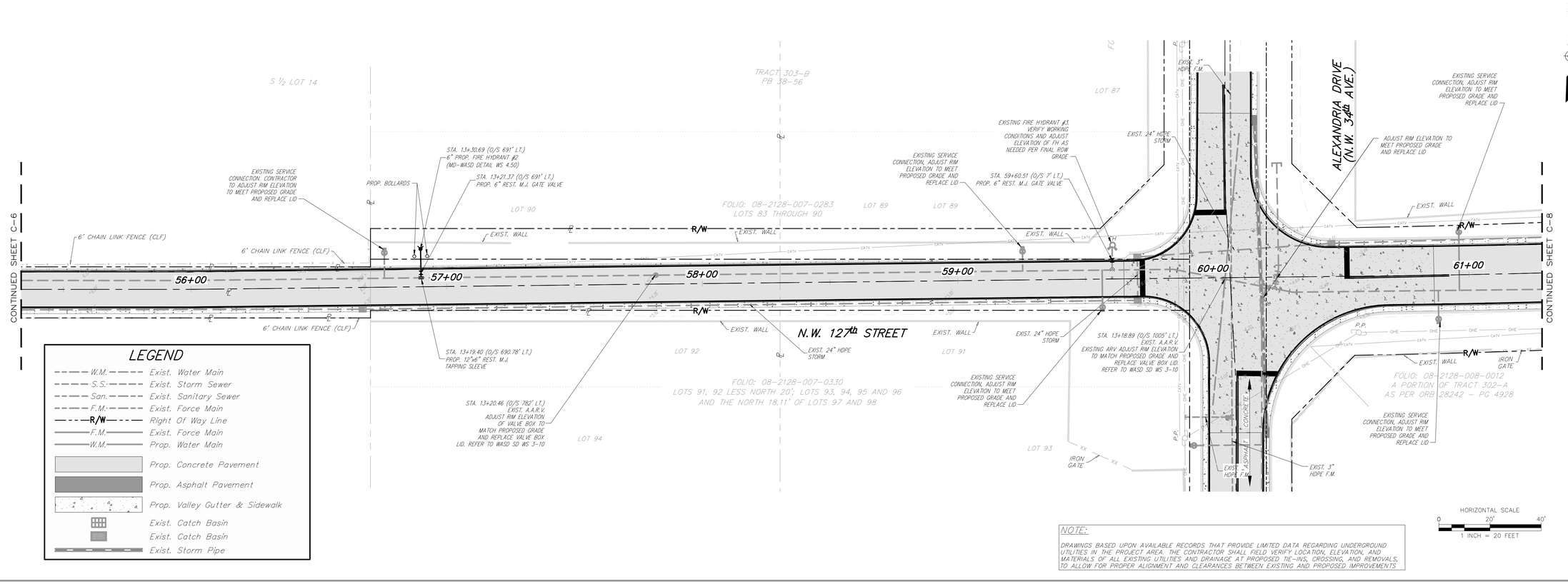
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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - WATER MAIN.DWG
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SHEET C-6

DRAWING No. 10 OF 15

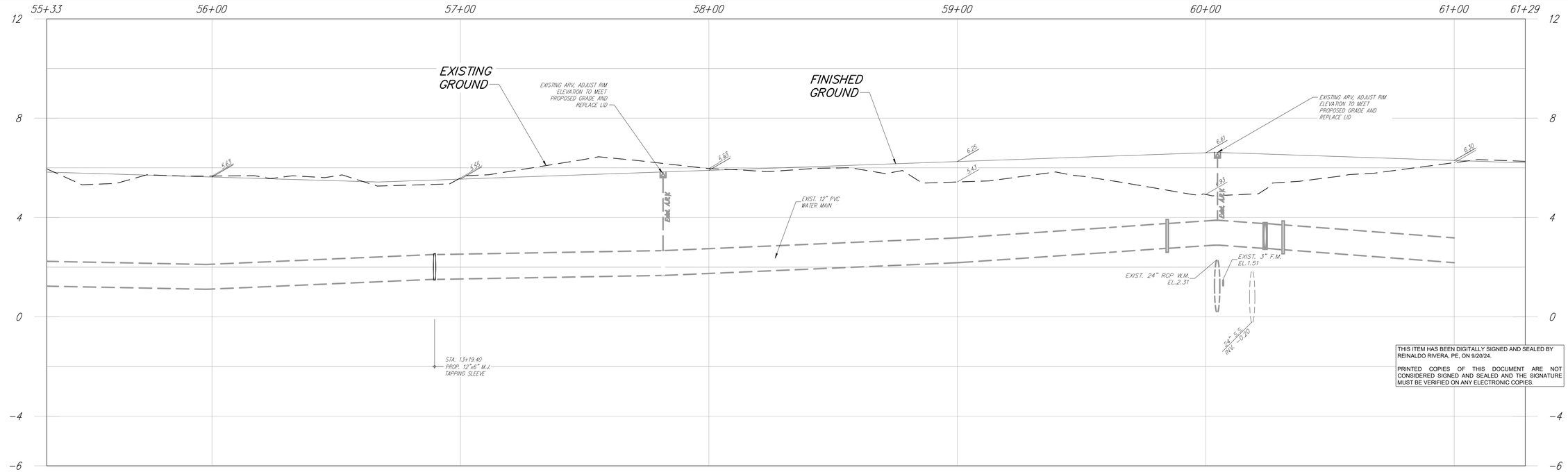


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2222 Ponce de Leon Blvd.
Suite 300
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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS WATER SYSTEM

PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

DRAWING HISTORY

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REVISIONS

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SECTION HEAD:
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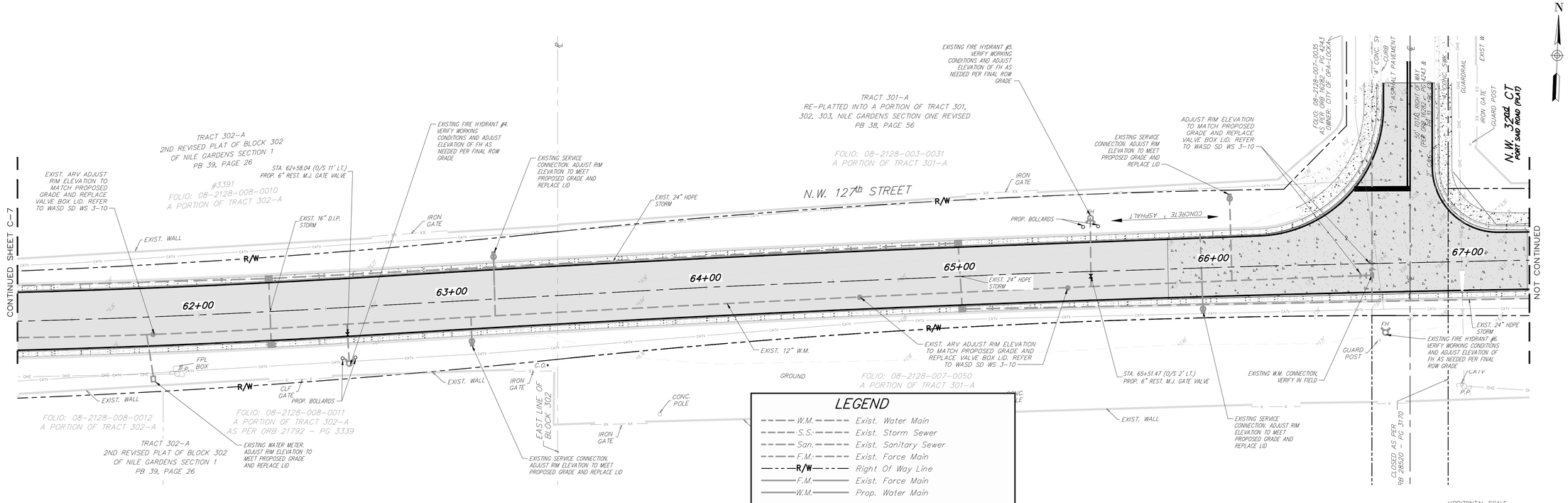
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State of Florida – License No. 83476
3850 Bird Rd. Suite 601
Miami, Florida 33146
(305) 753-2605

PROJECT No: 19-00098
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FILE NAME: OPA-LOCKA-TASK #4 - WATER MAIN.DWG
DATE: 9/19/24 | SCALE: AS SHOWN

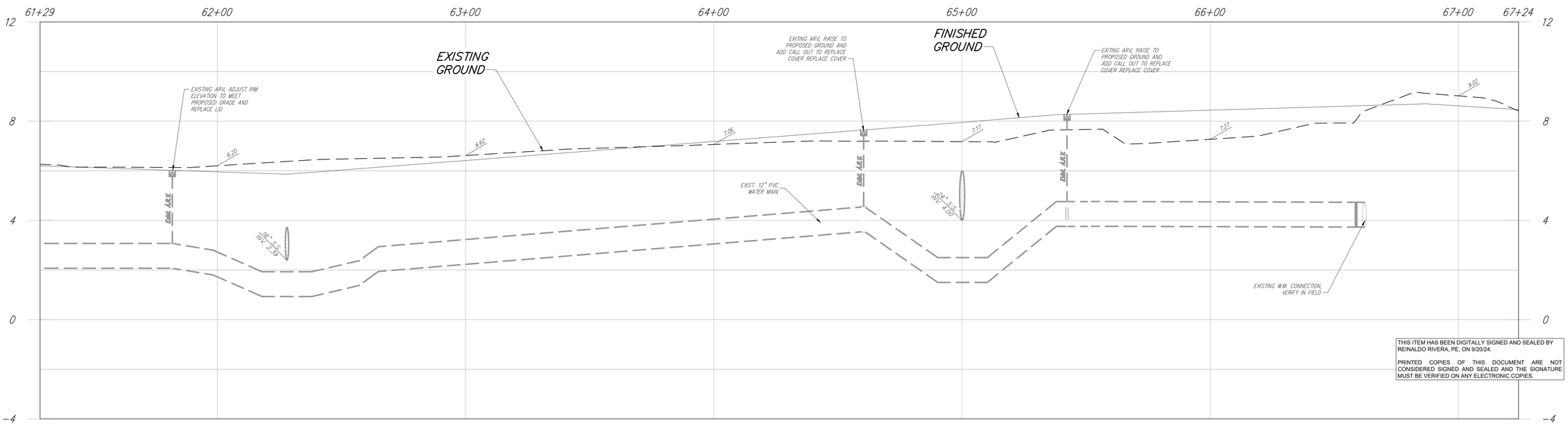
SHEET C-7

DRAWING No. 11 OF 15



NOTE:

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS WATER SYSTEM

PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

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60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
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REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

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Miami, Florida 33146
(305) 753-2605

PROJECT No: 19-00098

PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 - WATER MAINLINE

DATE: 9/19/24 | SCALE: AS SHOWN

SHEET C-8

DRAWING No. 12 OF 15

LOCATION OF PUBLIC WATER SYSTEM MAINS ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL LENGTH OF PIPE CENTERED)
Storm Sewer; Stormwater Force Main; Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum.	Alternate: 3 ft minimum Water Main
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate: 3 ft minimum Water Main
Gravity or Pressure; Sanitary Sewer Force Main; Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum.	Alternate: 6 ft minimum Water Main
On-Site Sewage Treatment & Disposal System	10 ft minimum	-	-

NOTES:
(1) WATER MAIN SHOULD BE ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(3) 3 FT. GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

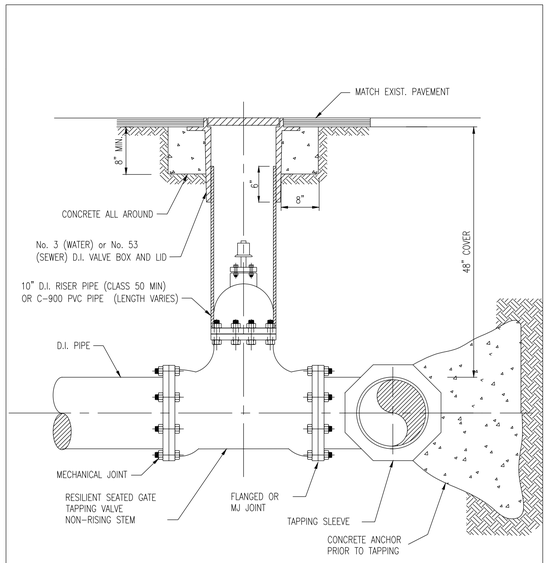
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
10/1/2017	D.V.

STANDARD DETAIL
POTABLE WATER MAIN, WASTEWATER & STORM SEWER CONFLICT

GS 1.5 — SHEET 1 OF 2



NOTES:

1. RESILIENT SEATED GATE TAPPING VALVE CAN BE USED FOR SEWER CONNECTION.
2. 18" CLEARANCE FROM FITTINGS AND BELLS.
3. TAPPING VALVE AND SLEEVE SHALL BE PRESSURE TESTED AT 150 "psi" PRIOR TO BEING TAPPED.
4. TAPPING ON CONCRETE MAINS SHALL BE PRESSURE TESTED AT A LOWER PRESSURE THAN THE ACTIVE OPERATING PRESSURE OF THE MAIN.

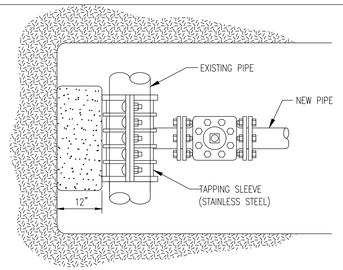
ITEM	CROSS REF.	SPEC. REF.
No.53 Valve Box INSTALLATION	SS 13.0	
No.3 Valve Box INSTALLATION	WS 3.11	
	GS 1.8	

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

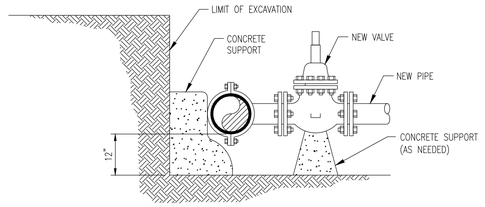
ISSUE DATE	APPROVED BY
01/22/2009	V.F.C.
07/20/2016	D.V.

STANDARD DETAIL
TYPICAL TAPPING VALVE SETTING (16" AND SMALLER)

GS 1.7 — SHEET 1 OF 1



PLAN VIEW



SECTION

PROCEDURE:

1. CONTRACTOR TO INSTALL AND PRESSURE TEST TAPPING SLEEVE AND VALVE, WITNESSED BY M-D.WASD INSPECTOR.
2. ALL TAPS LARGER THAN 20 INCHES SMALL BE DONE BY A TAPPING SPECIALIST WITH CREDENTIALS ACCEPTABLE TO THE DEPARTMENT.
3. CONTRACTOR TO SUPPLY EQUIPMENT TO HANDLE TAPPING MACHINE & DEWATERING EQUIPMENT.
4. 18" CLEARANCE FROM FITTINGS AND BELLS.
5. TAPPING VALVE AND SLEEVE SHALL BE PRESSURE TESTED AT 150 psi PRIOR TO BEING TAPPED.

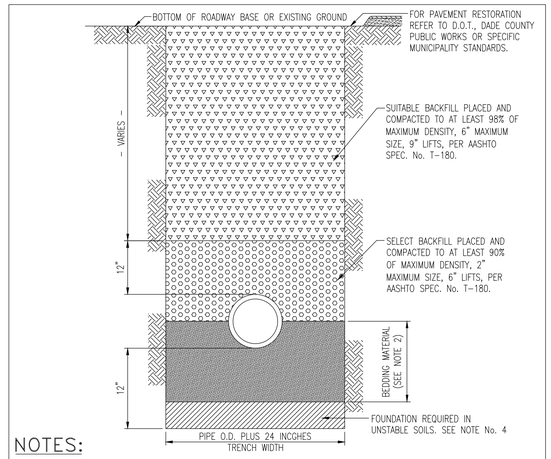
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
01/22/2009	V.F.C.
07/20/2016	D.V.

STANDARD DETAIL
TAPPING SLEEVE AND VALVE INSTALLATION (PROPOSED)

GS 1.8 — SHEET 1 OF 1



NOTES:

1. FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.
2. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, OR WASHED AND GRADED LIMEROCK (3/8"-1/8"), COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. No. T-180.
3. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
4. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS BELOW THE WATER TABLE, A FOUNDATION IS REQUIRED. COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-180. FOUNDATION MATERIAL SHALL BE SELECT BACKFILL MATERIAL, 2" MAXIMUM SIZE 6" LIFTS EXTEND EXCAVATION AT LEAST 2' DEEPER FOR FOUNDATION UNLESS SUITABLE MATERIAL IS FOUND AT A LESSER DEPTH, GREATER DEPTHS MAY BE REQUIRED FOR EXTREMELY POOR CONDITIONS.
5. POLYETHYLENE ENCASEMENT OF CAST IRON VALVES, PIPE AND FITTINGS, IF REQUIRED BY THE DEPARTMENT, SHALL BE PER ANSI/AWWA C105/A21.5, METHOD A, B OR C FOR TYPE 1 CLASS C TUBE, MIN. 8 MILS

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day

ISSUE DATE	APPROVED BY
11/01/2006	V.E.F.

STANDARD DETAIL
TYPICAL TRENCH BACKFILL FOR D.I. WATER AND FORCE MAINS

GS 1.9 — SHEET 1 OF 1

1. ALL MATERIALS AND LABOR UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE MIAMI-DADE WATER AND SEWER DEPARTMENT AND SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS AVAILABLE AND ON FILE WITH THE DEPARTMENT. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS.
2. COVER OVER WATER OR SEWER FORCE MAINS SHALL BE 4'-0" MIN.
3. ALL MAIN LINE VALVES SHALL BE INSTALLED COMPLETE WITH 10" RISER PIPES AND NO. 3 OR 53 VALVE BOXES FIRE HYDRANTS AND SERVICE VALVES SHALL BE INSTALLED COMPLETE WITH 6" RISER PIPES AND NO. 2 VALVE BOXES.
4. ALL FORCE MAIN SERVICE CONNECTIONS INTO PRESSURE TRANSMISSION MAINS SHALL HAVE A SHUT OFF VALVE AND CHECK VALVE AT THE POINT OF ENTRY.
5. ALL GRAVITY SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPARTMENT STANDARDS.
6. ALL WATER METERS WILL BE INSTALLED BY THE MIAMI-DADE WATER AND SEWER DEPARTMENT, PROVIDING THE APPROPRIATE CHARGES HAVE BEEN PREPAID.
7. FIRE HYDRANT REQUIREMENTS (NUMBER AND LOCATION) SHALL BE AS REQUIRED BY MIAMI-DADE COUNTY FIRE DEPARTMENT OR THE APPROPRIATE FIRE AGENCY WITH INSTALLATION IN ACCORDANCE WITH DEPARTMENT STANDARDS.
8. CONTRACTOR MUST CALL MDWASD INSPECTION DIVISION TO ARRANGE FOR A PRECONSTRUCTION MEETING 2 FULL BUSINESS DAYS PRIOR TO PROPOSED START OF CONSTRUCTION. CONTACT ONE CALL CENTER 48 HRS PRIOR TO EXCAVATION.
9. CONTRACT INSPECTOR WILL INSPECT ANY FACILITIES APPROVED BY THE DEPARTMENT. ALL OTHER REQUIREMENTS OF THE PERMITTING AGENCY SHALL BE IN ACCORDANCE WITH THEIR STANDARDS AND REQUIREMENTS.
10. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED AS COMPLETE UNTIL FINAL ACCEPTANCE OF THE SYSTEM BY THE DEPARTMENT AND UNTIL THE FOLLOWING DOCUMENTS ARE RECEIVED AND APPROVED BY THE DEPARTMENT:

a. EASEMENTS, IF REQUIRED
b. CONTRACTOR'S WAIVER AND RELEASE OF LIEN
c. ABSOLUTE BILL OF SALE
d. i. CONTRACTOR'S LETTER OF WARRANTY (I.E., LETTER AGREEMENT)
   ii DEVELOPER'S CONTRACT BOND (I.E., CONTRACT AGREEMENT).
e. "RECORD DRAWING" PRINTS (24"x 36") SHOWING SPECIFIC LOCATIONS, DEPTH, ETC. OF ALL WATER AND SEWER FACILITIES AS LOCATED BY A LICENSED SURVEYOR & MAPPER, ALONG WITH PRINTS OF "RECORD DRAWINGS" WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED SURVEYOR & MAPPER. (No. OF PRINTS: 3-FOR WATER, 4-FOR GRAVITY SEWER AND 5-FOR FORCE MAIN OR PUMP STATION PROJECTS). Submittal of final CAD Files required.
f. H.R.S. LETTER OF RELEASE REQUIRED FOR ALL WATER PROJECTS
g. BILL OF SALE SKETCH (8½"x 11") FOR WATER AND SEWER, SEPARATELY

11. ALL NEW CONNECTIONS FROM EXISTING DEPARTMENT MAINS TO BE MADE BY DEPARTMENT FORCES ONLY. THE CONTRACTOR TO EXCAVATE AT REQUIRED LOCATIONS, PROVIDE AND INSTALL MATERIAL WITH FITTINGS, PRIOR TO TAP.
12. AN APPROVED PAVING AND DRAINAGE PLAN MUST BE SUBMITTED TO MDWASD FOR ALL NEW SUBDIVISIONS PRIOR TO APPROVAL OF WATER AND SEWER PERMIT PLANS, UPON REQUEST.
13. UNLESS OTHERWISE SPECIFIED, ALL TAPS 20 INCHES AND SMALLER FOR CONNECTIONS TO EXISTING MAINS WILL BE DONE BY DEPARTMENT FORCES. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE PERMITTED TO TAP EXISTING MAINS IN THE SIZE RANGE SPECIFIED ABOVE. THE TAPPING SLEEVE AND TAPPING VALVE ARE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER THE SUPERVISION OF THE INSPECTOR.

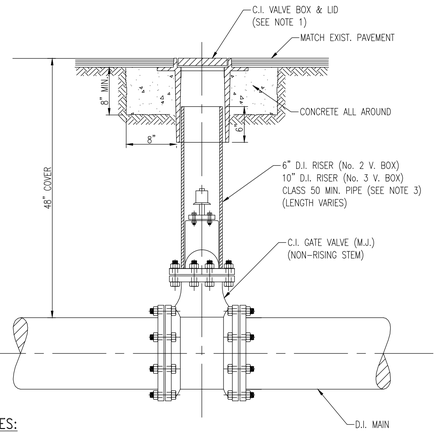
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
03/01/2010	V.F.C.
07/20/2016	D.V.

STANDARD DETAIL
STANDARD REQUIREMENTS WATER AND SEWER CONSTRUCTION

GS 0.5 — SHEET 1 OF 2



NOTES:

1. USE No. 2 VALVE BOX FOR:
   - FIRE HYDRANT VALVES
   - FIRE LINE SERVICES & DOMESTIC SERVICES
   - 2" MAINS IN EASEMENTS
   - BYPASS VALVES
2. USE No. 3 VALVE BOX FOR ALL MAIN LINE VALVES.
3. PVC C900 PIPE CAN BE USED FOR RISER IN LIEU OF DUCTILE IRON.
4. IF USED FOR RECLAIMED WATER VALVES, THE LID SHALL BE MARKED "R" AND BOTH THE LID AND THE RISER PIPE ARE TO BE COLORED PURPLE PANTONE 522C.

ITEM	CROSS REF.	SPEC. REF.
No. 3 VALVE BOX & LID	WS 3.11	
No. 2 VALVE BOX & LID	WS 3.10	

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
10/10/2008	V.F.C.

STANDARD DETAIL
TYPICAL GATE VALVE SETTING (SMALLER THAN 16")

WS 1.0 — SHEET 1 OF 1

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CITY OF OPA LOCKA FLORIDA

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS WATER SYSTEM

STANDARD DETAILS (WATER SYSTEM)

DRAWING HISTORY

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30%			
60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
PERMIT SET	X	01/19/23	A.D
BID SET	X	09/18/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD — CHECKED: LJ
DRAWN: RE — FINAL CHECK: RR

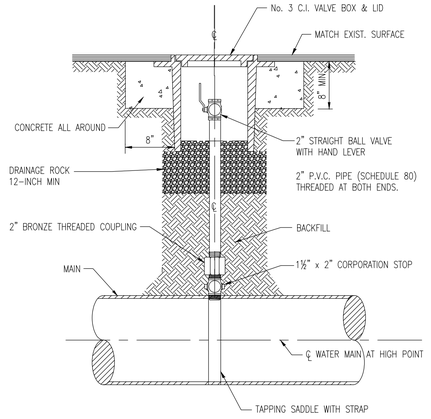
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
State of Florida – License No. 83476
3850 Bird Rd. Suite 601
Miami, Florida 33146
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – STANDARD DETAILS – WATER.DWG
DATE: 9/19/24 — SCALE: AS SHOWN

SHEET C-9

DRAWING No. 13 OF 15



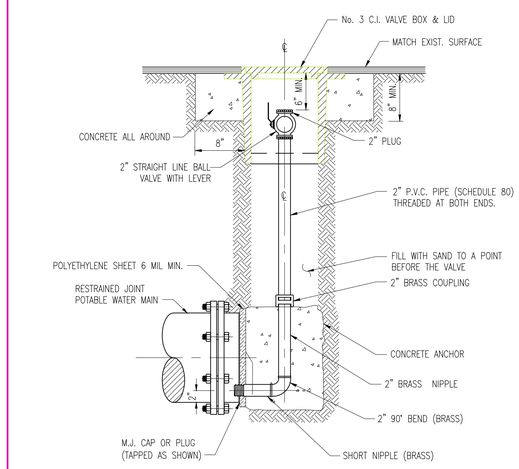
No. 3 VALVE BOX & LID	WS 3.11	
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	10/06/2009	V.F.C.
	06/09/2016	D.V.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

MANUAL AIR RELEASE VALVE

WS 1.60 SHEET 1 OF 1



NOTES:

1. 2" TAP IN BOTTOM OF PLUG.
2. ALL BRASS TO BE "LEAD FREE".

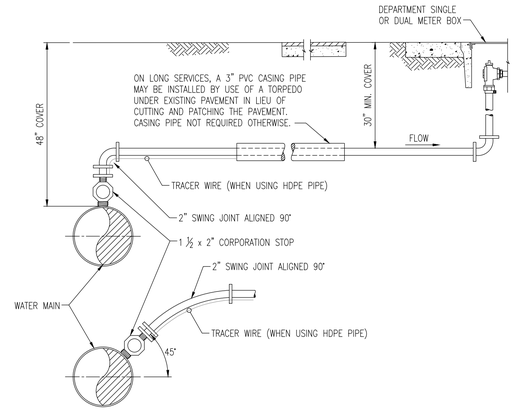
NO. 3 VALVE BOX & LID	WS 3.11	
CONC. ANCHORS	GS 1.1	
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	10/06/2009	V.F.C.
	10/1/2017 M.K.	D.V.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

TYPICAL 2" FLUSHING VALVE OUTLET

WS 1.61 SHEET 1 OF 1



NOTES:

1. CONTRACTOR HAS THE OPTION OF TAPPING AT 45°.
2. METERS WILL NOT BE INSTALLED IF THE METER BOX IS LOCATED ON A DRIVING SURFACE.
3. PROVIDE 36" MIN. COVER FOR SERVICES INSTALLED WITHIN ARTERIAL ROADS (INCLUDING ALL SECTION LINE AND HALF-SECTION LINE ROADS).
4. INSTALL TAPPING SADDLE FOR: THICKNESS CLASS D.I. MAINS 4" & SMALLER, PRESSURE CLASS D.I. WATER MAINS 8" & SMALLER, OR WHEN MAIN IS PVC, HDPE OR AC PIPE.
5. WHEN MAIN IS SHALLOWER THAN 48", A ⅛ OR ¼ BEND MUST BE USED.
6. WHEN USING HDPE SERVICE PIPE, A TEN GAUGE BLUE TRACER WIRE TO BE TAPED TO THE PIPE EVERY 2 FT. WITH POLY OR DUCT TAPE. TRACER WIRE TO BE MECHANICALLY FASTENED TO THE MAIN WHEN A METAL WATER MAIN IS USED.
7. USE SERVICE SADDLE AND TAPPING SLEEVE FOR PVC RECLAIMED WATER MAIN.

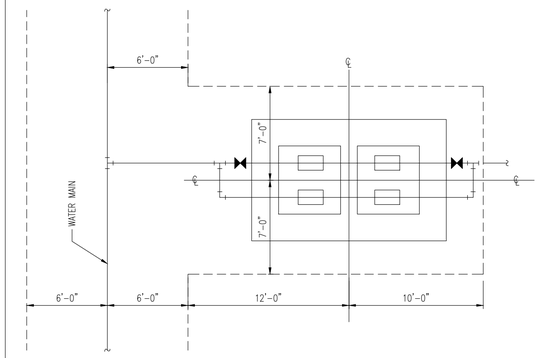
DUAL METER BOX	WS 2.12	
SINGLE METER BOX	WS 2.10	3.02
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	12/16/2009	V.F.C.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

TYPICAL 2" SERVICE CONNECTION (HDPE)

WS 2.16 SHEET 4 OF 4



LEGEND

Limits of WASD Easement

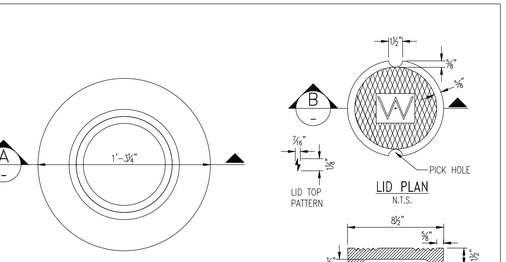
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ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	11/01/2006	V.F.C.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

EASEMENT REQUIREMENTFOR 10" TURBINE METER

WS 2.21 SHEET 3 OF 3



NOTES:

1. FOUNDRY AND LOCATION SHALL BE CAST ON BOTTOM OF LID. (SEE WS 2.05)
2. MACHINE FINISH BOTTOM OF COVER AND SEAT OF FRAME.
3. ALL DIMENSIONS ARE NET CASTING, NOT PATTERN.
4. IF USED FOR RECLAIMED WATER, THE CAST IRON LID AND BOX ARE TO BE COLORED PURPLE PANTONE 522C, AND THE LETTER "W" REPLACED WITH "R".

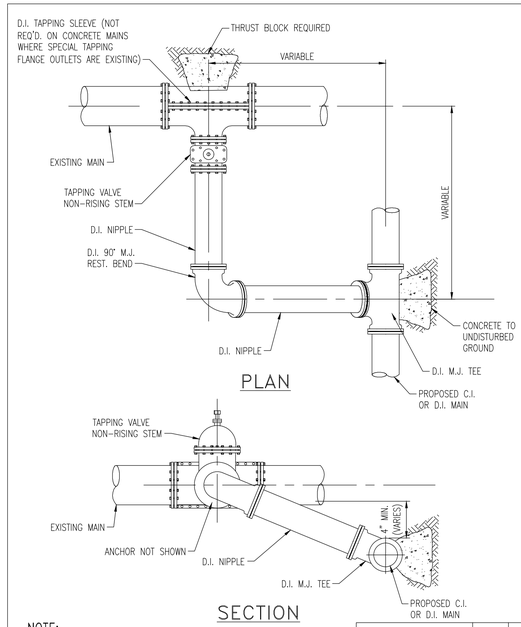
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	06/01/2008	V.F.C.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

No. 2 C.I. VALVE BOX AND LID

WS 3.10 SHEET 1 OF 1



NOTE:

1. ALL PIPE AND FITTINGS TO BE RESTRAINED.

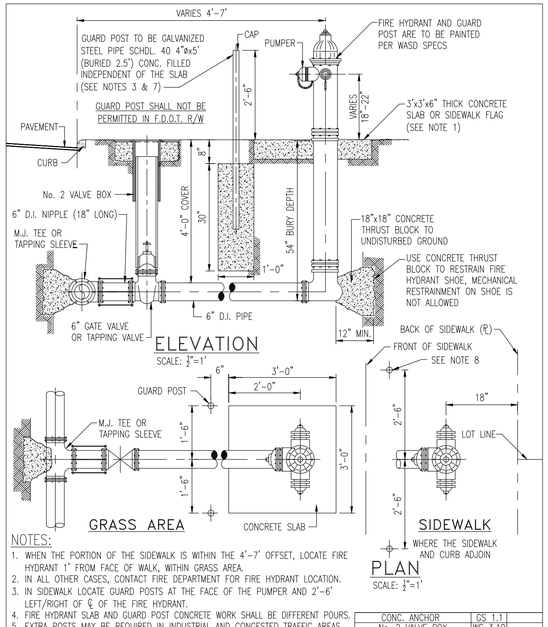
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	06/20/2008	V.F.C.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

TYPICAL CONNECTION TO EXISTING MAIN

WS 4.12 SHEET 1 OF 2



NOTES:

1. WHEN THE PORTION OF THE SIDEWALK IS WITHIN THE 4'-7" OFFSET, LOCATE FIRE HYDRANT 1' FROM FACE OF WALK, WITHIN GRASS AREA.
2. IN ALL OTHER CASES, CONTACT FIRE DEPARTMENT FOR FIRE HYDRANT LOCATION.
3. IN SIDEWALK LOCATE GUARD POSTS AT THE FACE OF THE PUMPER AND 2'-6' LEFT/RIGHT OF ℄ OF THE FIRE HYDRANT.
4. FIRE HYDRANT SLAB AND GUARD POST CONCRETE WORK SHALL BE DIFFERENT POURS.
5. EXTRA POSTS MAY BE REQUIRED IN INDUSTRIAL AND CONGESTED TRAFFIC AREAS.
6. FIRE HYDRANTS SHALL NOT BE LOCATED WITHIN A RADIUS.
7. GUARD POSTS SHALL NOT BE ALLOWED IN F.D.O.T. R/W (SEE SHEET 2 OF 2)
8. POSTS TO BE INSTALLED AT DISCRETION OF INSPECTOR.

CONC. ANCHOR	GS 1.1	
No. 2 VALVE BOX	WS 3.10	
TYP. TIE ROD DETAIL	GS 1.0	
TYP. GATE VALVE	WS 1.0	
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY	ISSUE DATE	APPROVED BY
Delivering Excellence Every Day	02/25/2013	F.A.
WATER & SEWER DEPARTMENT		

STANDARD DETAIL

TYPICAL FIRE HYDRANT INSTALLATION WITH GUARD POSTS

WS 4.50 SHEET 1 OF 2

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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM

STANDARD DETAILS (WATER SYSTEM)

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
PERMIT SET	X	01/19/23	A.D
BID SET	X	09/18/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
State of Florida – License No. 83476
3850 Bird Rd. Suite 601
Miami, Florida 33146
(305) 753-2605

PROJECT No: 19-00098

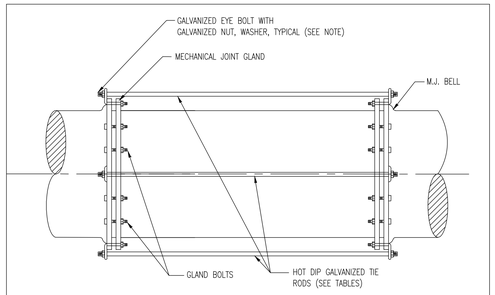
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – STANDARD DETAILS – WATER.DWG

DATE: 9/19/24 | SCALE: AS SHOWN

SHEET C-10

DRAWING No. 14 OF 15



PRESSURE AT 150 P.S.I.		
PIPE SIZE	ROD DIAMETER	No. OF RODS
8" & SMALLER	⅝"	3
12"	⅝"	4
16"	⅝"	6
20"	⅝"	8
24"	¾"	12
30"	1"	14
36"	1"	14
42"	1– ¼"	16
48"	1– ¼"	16

NOTES:

1. EYE BOLT REPLACES GLAND BOLT AT TIE ROD LOCATIONS.
2. IN LIEU OF BELL/ROD RESTRAINTS, MECHANICAL JOINT RESTRAINTS MAY BE USED

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

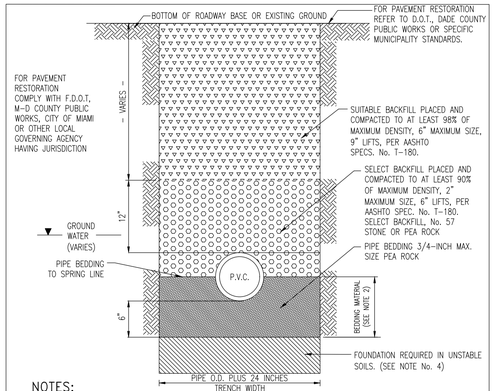
ISSUE DATE	APPROVED BY
11/01/2006	V.E.F.
07/20/2016	D.V.

STANDARD DETAIL

TYPICAL TIE–ROD DETAILS

GS 1.0

SHEET 1 OF 1



NOTES:

1. FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.
2. FOR PVC PIPE NEW 3/4–INCH MAX SIZE PIPE BEDDING MATERIAL IS REQUIRED. EXISTING SELECT BACKFILL MATERIAL MAY BE SEGREGATED WITH ANY ROCKS LARGER THAN 2–INCHES REMOVED AND PLACED INTO THE TRENCH IF APPROVED BY THE ENGINEER.
3. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
4. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS BELOW THE WATER TABLE, A FOUNDATION IS REQUIRED. COMPACTED TO AT LEAST 90' OF MAX. DENSITY, 6" LIFTS PER AASHTO SPEC. No. T–180. FOUNDATION MATERIAL SHALL BE SELECT BACKFILL MATERIAL, 2" MAXIMUM SIZE IN 6" LIFTS. EXTEND EXCAVATION AT LEAST 2' DEEPER FOR FOUNDATION UNLESS SUITABLE MATERIAL IS FOUND AT A LESSER DEPTH. GREATER DEPTHS MAY BE REQUIRED FOR EXTREMELY POOR CONDITIONS.
5. POLYETHYLENE ENCASEMENT OF CAST IRON VALVES, PIPE AND FITTINGS, IF REQUIRED BY THE DEPARTMENT, SHALL BE PER ANSI/AWWA C105/A21.5, METHOD A, B OR C FOR TYPE I CLASS C TUBE, MIN. 8 MILS THICK.
6. NO COMPACTION IS REQUIRED BELOW THE WATER TABLE.

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
11/01/2006	V. E. F.
01/30/2017	D.V.
09/22/2022	D.V.

STANDARD DETAIL

TYPICAL TRENCH BACKFILL FOR PVC WATER AND FORCE MAIN

GS 1.9

SHEET 2 OF 2

MINIMUM LENGTH OF PIPE (FEET) TO BE RESTRAINED

(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE		PIPE SIZE 4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° HORIZONTAL BEND		14	20	25	30	35	45	54	62	73	84	93	101
45° HORIZONTAL BEND		6	8	11	13	15	19	22	26	30	35	38	42
22.5° HORIZONTAL BEND		3	4	5	6	7	9	11	12	15	17	18	20
11.25° HORIZONTAL BEND		1	2	3	3	4	4	5	6	7	8	9	10
90° VERTICAL OFFSET	UPPER BEND	55	79	103	125	147	189	228	266	319	368	412	454
	LOWER BEND	22	38	49	59	69	88	106	123	145	165	184	201
45° VERTICAL OFFSET	UPPER BEND	22	32	42	51	60	77	93	109	131	151	170	187
	LOWER BEND	10	14	19	23	28	35	43	50	59	67	75	82
22.5° VERTICAL OFFSET	UPPER BEND	7	12	17	21	26	34	42	49	60	70	78	87
	LOWER BEND	2	4	6	8	10	14	17	21	25	29	33	36
11.25° VERTICAL OFFSET	UPPER BEND	3	4	6	9	11	15	19	22	28	32	37	41
	LOWER BEND	1	1	1	2	3	5	7	8	10	12	14	16
PLUG (DEAD END)		32	45	59	70	83	107	129	151	190	220	244	270
IN–LINE VALVE		32	45	59	70	83	107	129	151	100	110	125	135
TEE (BRANCH RESTRAINT)	4"x 0	23											
	6"x 0	21	35										
	8"x 0	18	34	47									
	10"x 0	16	32	46	58								
	12"x 0	13	30	44	57	69							
	16"x 0	7	26	41	55	67	90						
	20"x 0	1	21	38	52	65	88	109					
	24"x 0	1	16	34	49	62	86	108	129				
	30"x 0	8	28	44	58	83	106	127	154				
	36"x 0	1	1	22	39	54	80	103	124	153	179		
	42"x 0	1	1	15	33	49	77	100	122	151	177	201	
	48"x 0	1	1	7	27	44	73	97	120	149	176	200	222
REDUCER (LARGER PIPE RESTRAINT)	6"x 0	23											
	8"x 0	38	25										
	10"x 0	57	43	24									
	12"x 0	72	60	44	41								
	16"x 0	99	90	78	75	45							
	20"x 0	123	116	107	105	81	45						
	24"x 0	146	140	132	131	111	82	45					
	30"x 0	157	153	148	141	133	113	87	56				
	36"x 0	182	179	175	169	163	147	126	101	56			
	42"x 0	205	202	199	194	189	175	158	138	100	54		
	48"x 0	226	224	221	217	213	201	187	169	138	98	53	

NOTES:

1. THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
   - 1A: SOIL TYPE–SAND
   - 1B: TEST PRESSURE–150 PSI
   - 1C: DEPTH OF BURY–4'
   - 1D: TRENCH TYPE–3
   - 1E: SAFETY FACTOR–1.5
   - 1F: VERTICAL OFFSET–3'
   - 1G: MINIMUM PIPE LENGTH ALONG TEE RUN–5'
2. THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
4. RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.

ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
04/10/2014	J.F.
07/20/2016	D.V.

STANDARD DETAIL

STANDARD REQUIREMENTS FOR WATER AND SEWER MECHANICAL THRUST RESTRAINT

GS 2.0

SHEET 1 OF 1

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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER SYSTEM

STANDARD DETAILS (WATER SYSTEM)

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	A.D
90%	X	12/16/22	A.D
PERMIT SET	X	01/19/23	A.D
BID SET	X	09/18/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

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State of Florida – License No. 83476
3850 Bird Rd. Suite 601
Miami, Florida 33146
(305) 753–2605

PROJECT No: 19–00098

PCTS No:

FILE NAME: OPA–LOCKA–TASK #4 – STANDARD DETAILS – WATER.DWG

DATE: 9/19/24 | SCALE: AS SHOWN

SHEET C–11

DRAWING No. 15 OF 15

CITY OF OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM
SEPTEMBER 2024

CITY OF OPA LOCKA FLORIDA

UTILITY PROVIDERS

MIAMI DADE WATER & SEWER
MIAMI-MADE WATER & SEWER DEPARTMENT
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MIAMI, FL 33146
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PHONE: (786) 268-5273

POWER
FLORIDA POWER & LIGHT
10705 QUAIL ROOST DR.
MIAMI, FL 33157
CONTACT: EDGAR AGUILAR
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TELEPHONE
AT&T/DISTRIBUTION
6628 LAKESIDE RD
WEST PALM BEACH, FL, 33411
CONTACT: DINO FARRUGGIO
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STORM DRAINAGE PERMITING
MIAMI DADE COUNTY DEPARTMENT OF REGULATORY & ECONOMIC RESOURCES
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MIAMI, FL 33166
PHONE: (305) 372-6789

GAS
FLORIDA CITY GAS
4045 NW 97TH AVE
DORAL, FL 33178
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PHONE: (305) 835-3618

CABLE
VERIZON
3301 MATRIX DRIVE SUITE 100
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2222 PONCE DE LEON BLVD, SUITE 300
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GEOTECHNICAL
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1215 WALLACE DRIVE
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DATE: 09/03/2020



LOCATION PLAN
MIAMI-DADE COUNTY PORTION OF SEC. 35 - TWP. 51 S. - RGE 42 E.
N.T.S.

SHEET INDEX

G-1	COVER
G-2 TO G-3	GENERAL PLAN & NOTES
G-4	KEY SHEET
C-1 TO C-5	PLAN & PROFILE
C-6 TO C-7	STANDARD DETAILS

COMMUNITY OFFICIALS
VERONICA J. WILLIAMS, MAYOR

JOHN H. TAYLOR JR., VICE MAYOR
DR. SHERELEAN BASS, COMMISSIONER
CHRIS DAVIS, COMMISSIONER
AUDREY DOMINGUEZ, COMMISSIONER

Reinaldo J. Rivera-Reyes
Digitally signed by Reinaldo J. Rivera-Reyes
DN: CN=Reinaldo J. Rivera-Reyes, O=300 Engineering Group, P.A., L=Coral Gables, ST=Florida, SERIALNUMBER=MAS2024060354444, C=US
Date: 2024.09.20 17:59:40-04'00'

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(305) 753-2605

300 ENGINEERING GROUP, LLC

AIRIA AUSTIN
PUBLIC WORKS & CIP DIRECTOR
CITY OF OPA-LOCKA PUBLIC WORKS DEPARTMENT
780 FISHERMAN STREET
OPA-LOCKA, FL 33054

BID SET

A.D. SR. PROG. MGR.	D.S.J. ENG. HEAD	R.R. CONST. HEAD	PROJECT No: 20-0324200
DRAWN: R.E.	DATE: 9/19/24	SHEET 1	OF 11
FILE NAME: OPA-LOCKA-TASK #4 - COVER - G-01 - FORCE MAIN SYSTEM - BID SET.DWG		DWG. No.	G-1

GENERAL NOTES

1. THE FOLLOWING UTILITY COMPANIES SHOULD BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION IN AREA:
   - COMCAST CABLE.
   - FLORIDA DEPARTMENT TRANSPORTATION.
   - FPL.
   - AT&T DISTRIBUTION.
   - CROWN CASTLE NG..
   - MIAMI DADE WATER & SEWER.
   - DADE COUNTY–PUBLIC WORKS AND TRAFFIC
   - AT&T COMMUNICATIONS.
   - FLORIDA CITY GAS
   - MCI
2. CONTRACTOR TO NOTIFY SUNSHINE STATE ONE CALL OF FLORIDA INC. BY CALLING 811 AT LEAST 48 HOURS PRIOR TO EXCAVATING.
3. THERE MAY BE OTHER EXISTING UTILITIES IN THE AREA WHICH ARE NOT SHOWN ON THE PLANS. CONTRACTOR IS RESPONSIBLE TO LOCATE ALL UTILITIES BEFORE START CONSTRUCTION.
4. SURVEYING PROVIDED BY BELLO & BELLO LAND SURVEYING CORP. STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.
5. GRADING SHOWN IS ALONG THE PROPOSED PIPE ALIGNMENT.
6. FOR REQUIREMENTS FOR MECHANICAL THRUST RESTRAINT, SEE STANDARD DETAIL GS 2.0
7. ALL PIPE AND FITTINGS INSTALLED UNDER THIS PROJECT MUST BE CLEARLY IDENTIFIED AS A WASTEWATER FORCE MAIN AS REQUIRED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.AND THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES 49.7 MDWASD. SHALL USE GREEN PAINT TO IDENTIFY FORCE MAINS. IF PAINT IS APPLYING DURING INSTALLATION OF THE PIPE, THE PAINT SHALL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ON THE TOP OF THE PIPE.
8. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE MDWASD HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
9. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION, STOP EXCAVATION WORK AND NOTIFY WASD HAZARDOUS MATERIALS MANAGEMENT SECTION AT (786) 552–8400 AND THE CONSTRUCTION CONTRACTS MANAGEMENT DIVISION AT (786) 268–5161. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE ANY OF THE FOLLOWING: 1. ODOR 2. SOLID WASTE DEBRIS 3. SHEEN ON THE GROUNDWATER 4. STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR 5. FREE FLOATING PRODUCT ON THE GROUNDWATER (OIL, DIESEL, GASOLINE, ETC.). MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL..
10. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES, ETC) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRUSION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOI) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(4), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING PAVEMENT OUT OF THE WORKING AREA.
13. PAVEMENT RESTORATION TO BE DONE IN ACCORDANCE WITH FDOT AND MIAMI–DADE COUNTY PUBLIC WORKS DEPARTMENT REQUIREMENTS UNLESS OTHERWISE NOTED.
14. MILLING AND RESURFACING PAVEMENT RESTORATION WILL BE AS SHOWN ON PLANS.
15. THE ENGINEERING OF RECORD IS IN RESPONSIBLE CHARGE FOR THE DESIGN PART OF THIS PROJECT ONLY.
16. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION
17. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE CITY OF OPA LOCKA PUBLIC WORKS DEPARTMENT OR THE ENGINEER OF RECORD
18. THE CONTRACTOR SHALL PROVIDE ACCESS AND ASSISTANCE TO CITY OF OPA–LOCKA INSPECTORS, ENGINEER OF RECORD, OR HIS DESIGNEE TO MAKE INSPECTIONS AS NECESSARY DURING CONSTRUCTION.
19. EXISTING UNDERGROUND UTILITIES ON THE DRAWINGS HAVE BEEN SHOWN BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND THE CITY DO NOT GUARANTEE THE ACCURACY OR THE INCLUSIVENESS OF THIS DATA. THE CONTRACTOR IS REQUIRED TO MARK AND CLEARLY DELINEATE LOCATIONS OF EXISTING UTILITIES WITHIN AREAS OF WORK PRIOR TO EXCAVATION TO AVOID DAMAGE. THE CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO IDENTIFY, LOCATE AND MARK EXISTING UTILITIES BY FIELD VERIFICATION, (E.G. SOFT DIGGING) COORDINATION WITH UTILITY COMPANIES AND ELECTRONIC OR OTHER SUCH DETECTION TECHNOLOGY, AND MEANS AND SHALL BEAR ALL COSTS FOR THIS WORK. THE ENGINEER OF RECORD AND THE CITY SHALL NOT BE HELD LIABLE FOR ANY UTILITY CONFLICTS AND UNKNOWNS THAT ARE DISCOVERED DURING CONSTRUCTION
20. THE CONTRACTOR MUST HAND EXCAVATE AROUND AREAS WHERE EXISTING UNDERGROUND UTILITIES ARE EXPECTED OR SUSPECTED IN ORDER TO AVOID DAMAGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND COSTS TO CORRECT DAMAGES RESULTING FROM FAILURE TO TAKE ALL NECESSARY PRECAUTIONS INCLUDING LOCATING, MARKING AND CAREFUL EXCAVATION. CONTRACTOR SHALL LOCATE ALL SPRINKLERS, ELECTRICAL, SANITATION, STORMWATER, COMMUNICATION, SEWER AND WATER LINES IN AREA OF WORK AND SHALL CUT AND RELOCATE SPRINKLERS AND SPRINKLERS WATER LINES AS NECESSARY TO COMPLETE THE WORK. CONTRACTOR TO REPAIR OR HAVE REPAIRED ANY EXISTING UTILITY LINE DAMAGED DURING WORK. LOCATION OF SPRINKLER LINES AND HEADS WERE NOT PROVIDED TO THE ENGINEER AND THEREFORE ARE NOT SHOWN ON THE PLANS.
21. IF CONTRACTOR IDENTIFIES ANY UTILIY CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER/ENGINEER–OF–RECORD AND THE ASSIGNED CITY OF CORAL GABLES CONSTRUCTION MANAGER SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE CONFLICTS.
22. THE CONTRACTOR SHALL ACCURATELY RECORD THE LOCATION AND ELEVATIONS OF THE PIPE WORK AND EXISTING UTILITIES AND STRUCTURES ENCOUNTERED AND PROVIDE COMPLETE, NEAT AND ORDERLY AS–BUILT DATA PRIOR TO PROJECT CLOSE OUT.
23. THE PIPELINE HORIZONTAL ALIGNMENT IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE PIPE LENGTHS TO MEET THE ALIGNMENT AND TO AVOID CONFLICTS WITH EXISTING UTILITIES.
24. ALL EXISTING UTILITIES, MANHOLE COVERS, ELECTRICAL BOXES, VALVE BOXES, METER BOXES, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO GRADE ELEVATION, UNLESS OTHERWISE NOTED.
25. CONTRACTOR SHALL REPLACE ALL UTILITY BOXES/COVERS DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL NOTE THE CONDITION OF WATER METER BOXES BEFORE STARTING WORK. CONTRACTOR SHALL CONTACT THE CITY OF OPA–LOCKA PUBLIC WORKS DEPARTMENT TO INSPECT METERS AND BOXES AHEAD OF CONSTRUCTION TO DETERMINE WHETHER REPLACEMENT IS NECESSARY. ALL WATER METER BOXES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH COUNTY ISSUED WATER METER BOXES AND PAID FOR BY CONTRACTOR
26. ALL SODDED AREAS, SHRUBBERY, TREES, FENCES, MAILBOXES, DRIVEWAYS AND OTHERS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER
27. DEWATERING PERMIT MUST BE OBTAINED BY THE CONTRACTOR WITH MD RER–DERM.
28. STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.
29. ALL PIPING SHALL BE OF THE SIZE AND MATERIAL SHOWN OR SPECIFIED.
30. CONTRACTOR SHALL PROVIDE TEMPORARY TEST PLUGS AND BULKHEADS OR OTHER DEVICES NECESSARY TO SUCCESSFULLY COMPLETE TESTING OF ALL PIPING.
31. CONTRACTOR SHALL PROVIDE TEMPORARY RESTRAINING FOR EXISTING PIPELINE DURING INSTALLATION OF THE PROPOSED PRESURIZED PIPE.
32. ALL RELATED HARDWARE FOR RESTRAINING RODS TO BE CLASS 316 STAINLESS STEEL
33. VALVES AT INTERSECTIONS, BRANCH MAINS OR STOP OUTS SHALL BE RESTRAINED TO THE ADJACENT FITTING UNLESS OTHERWISE NOTED.
34. CUTTING AND PLUGGING OF EXISTING PIPELINES SHALL BE ACCOMPLISHED BY MECHANICALLY RESTRAINING THE PLUG OR CAP. A MINIMUM OF 20 FEET OF PIPE SHALL BE PROVIDED TO ENSURE THE STABILITY OF THE INSTALLATION.
35. ALL UNDERGROUND PRESSURE PIPE FITTINGS SHALL BE RESTRAINED AS NOTED ON THE DRAWINGS.
36. FOR REQUIREMENTS FOR MECHANICAL THRUST RESTRAINT, SEE WASD STANDARD DETAIL GS 2.0. MECHANICAL JOINT RESTRAINS SHALL BE EBAA IRON SERIES 2000 AND 1600
37. ALL PIPES SHALL BE LAID IN A CLEAN, DRY TRENCH. DEWATERING AS REQUIRED SHALL BE AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATIONS COMPLY WITH OSHA'S EXCAVATION SAFETY STANDARDS AND THE FLORIDA TRENCH SAFETY ACT. DISCHARGE WATER SHALL NOT BE DIRECTED THROUGH THE PIPE BEING LAID. CONTRACTOR SHALL FURNISH THE OWNER WITH WRITTEN ASSURANCE THAT HE WILL COMPLY WITH THESE REGULATIONS
38. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING UNINTERRUPTED WATER SERVICE DURING THE CONSTRUCTION OF THE TIE–IN CONNECTION OF ALL PROPOSED WATER SYSTEMS TO ANY EXISTING WATER SERVICE LINES. ABANDONMENT SHALL NOT OCCUR UNTIL THE PROPOSED WORK HAS BEEN APPROVED AND ACCEPTED FOR OPERATION BY THE ENGINEER OF RECORD AND THE CITY OF OPA–LOCKA WORKS DEPARTMENT. CONTRACTOR SHALL REQUEST FROM CITY OF OPA–LOCKA 48 HOURS PRIOR FOR WATER MAIN SHUTDOWN.
39. PRIOR TO THE SHUTDOWN FOR TIE IN OF ANY WATER, FIRE, SEWER, OR STORMWATER MAINS, THE CITY SHALL PERFORM AN ONSITE INSPECTION TO VERITY: 1) SIZE OF PIPE AND 2) MATERIALS ONSITE. IF THIS INSPECTION DOES NOT OCCUR OR PARTS ARE MISSING, THE SHUTDOWN WILL BE CANCELED. THE CITY CAN, AT ANY TIME, CANCEL SCHEDULED SHUTDOWNS DUE TO INCLEMENT WEATHER EVENTS AND/OR SPECIAL EVENTS.
40. FOR WATER OR FIRE MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 150 PSI FOR TWO (2) HOURS BEFORE TAPPING. FOR SEWER OR STORMWATER MAINS, TAPPING SLEEVE VALVE TO BE PRESSURE TESTED AT 100 PSI FOR TWO (2) HOURS BEFORE TAPPING.
41. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.
42. CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE WITH THE FLORIDA DEPARTMENT OF HEALTH (FDOH) FOR THE WATER SAMPLING AND BACTERIOLOGICAL TESTS AND FINAL CERTIFICATION FROM FDOH.
43. EXISTING FIRE HYDRANTS SHALL REMAIN IN SERVICE UNTIL THE NEW MAIN IS PLACED IN SERVICE. ONCE THE NEW MAIN IS IN SERVICE, THE OLD HYDRANT SHALL BE COVERED AND TAGGED WITH A SIGN INDICATING "OUT OF SERVICE" UNTIL IT IS REMOVED BY THE CONTRACTOR.
44. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE CITY OF OPA–LOCKA HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE OWNER/CITY.
45. CONTRACTOR TO PROVIDE A STORMWATER POLLUTION PREVENTION PLAN FOR APPROVAL PRIOR COMMENCING CONSTRUCTION WORK. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS. ALL INLETS AND DRAINS SHALL BE PROTECTED AND MUST BE MAINTAINED FREE OF DEBRIS AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRUSION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.
46. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION, STOP EXCAVATION WORK AND NOTIFY THE CITY OF OPA–LOCKA. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE ANY OF THE FOLLOWING: 1. ODOR 2. SOLID WASTE DEBRIS 3. SHEEN ON THE GROUNDWATER 4. STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR 5. FREE FLOATING PRODUCT ON THE GROUNDWATER (OIL, DIESEL, GASOLINE, ETC.). MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL.
47. PAVEMENT RESTORATION LIMITS ARE AS INDICATED IN THE DRAWINGS. PAVEMENT RESTORATION IS TO BE DONE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION AND MIAMI DADE COUNTY SPECIFICATIONS UNLESS OTHERWISE NOTED.
48. ALL ASPHALT/CONCRETE SHALL BE SAW CUT TO ENSURE CLEAN EDGES.
49. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOI) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(4),A MULTI–SECTOR GENERIC PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY (MSGP) AND A NOTICE OF INTENT (NOI) TO USE SAID MULTI–SECTOR GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(5), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.
50. ONLY MATERIALS AND EQUIPMENTS THAT ARE REQUIRED TO BE USED UNDER THIS CONTRACT WILL BE ALLOWED ON THE PROJECT PREMISES.
51. SOD AND/OR MULCH SHALL BE INSTALLED AND MAINTAINED ON EXPOSED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADE, AND AT OTHER TIMES AS SOD AND/OR MULCH SHALL BE INSTALLED AND MAINTAINED ON EXPOSED AREAS WITHIN 48 HOURS OF COMPLETING FINAL GRADE, AND AT OTHER TIMES AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGE INTO ADJACENT WATER BODIES OR DRAINAGE SYSTEMS. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL SEDIMENTATION AND/OR TURBIDITY. SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL SHALL BE UTILIZED DURING CONSTRUCTION.
52. CONTRACTOR SHALL INCLUDE ALL MEANS & METHODS NECESSARY TO FACILITATE CONSTRUCTION OF COMPLETE WATER, STORMWATER, SEWER AND ROADWAY IMPROVEMENTS. THESE SHALL INCLUDE ALL MEANS & METHODS NECESSARY TO FACILITATE CONSTRUCTION OF COMPLETE INFRASTRUCTURE INSTALLATION AND SHALL INCLUDE, BUT NOT LIMITED TO: SHEET PILINGS, TRENCH BOXES, STEEL PLATES AND CONCRETE BARRIER WALLS AS NECESSARY TO PROTECT THE INTEGRITY OF THE WORK SITE, THE CONTRACTOR AND THE PUBLIC.
53. IF SHEET PILINGS ARE REQUIRED FOR EXCAVATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED ENGINEER.
54. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF MAINTENANCE OF TRAFFIC DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE PERMITTING AGENCIES.
55. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL DURING CONSTRUCTION AND FOR ANY NECESSARY TEMPORARY TRAFFIC DIVERSIONS DURING CONSTRUCTION.
56. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL REQUIRED CLOSEOUT DOCUMENTATION HAS BEEN SUBMITTED AS REQUIRED BY THE CONTRACT DOCUMENTS AND CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT. AS PART OF CLOSEOUT, AS–BUILT DRAWINGS IN ACCORDANCE WITH CITY OF MIAMI BEACH PUBLIC WORKS MANUAL SECTION 8 SHALL BE PROVIDED.
57. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED SURVEYOR TO COMPLETE AS–BUILT DRAWINGS FOR THE PROJECT.
58. WHEN POWER POLES ARE ADJACENT TO ANY PROPOSED UTILITY, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION. THE SHORING AND SUPPORT METHODS SHALL BE APPROVED BY THE UTILITY COMPANY ENGINEERING DEPARTMENT. THE COST OF SHORING WILL BE INCLUDED IN THE OVERALL PROJECT COST.
59. PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONGSIDE OF AND OVER ALL UTILITIES. THE CITY REQUIRES THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COST OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CITY. IF RESULTS OF TESTS TAKEN DURING THE PROGRESS OF THE WORK INDICATE COMPACTED MATERIALS DO NOT MEET SPECIFIED REQUIREMENTS, SUCH DEFECTIVE WORK WILL BE REMOVED, REPLACED, AND RE–TESTED AS DIRECTED BY THE ENGINEER AND AT THE CONTRACTOR'S SOLE EXPENSE
60. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SOIL MANAGEMENT PLAN TO THE EOR BEFORE THE BEGINNING OF CONSTRUCTION.
61. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A HEALTH AND SAFETY PLAN TO THE EOR BEFORE THE BEGINNING OF CONSTRUCTION.
62. PLANS ARE SUBJECT TO REVISION PENDING THE OUTCOME OF ONGOING PERMITTING EFFORTS. ANY CHANGES REQUIRED BY PERMITTING APPROVALS OR AGENCIES WILL BE INCORPORATED INTO THE CONFORMED SET OF DRAWINGS AS NECESSARY.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 9/20/24.

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DATE: 09/03/2020

CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM
GENERAL PLAN & NOTES

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	AD
PERMIT SET	X	01/19/23	AD
BID SET	X	09/18/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD. SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753–2605

PROJECT. No:19–00098
PCTS No:
FILE NAME: OPA–LOCKA–TASK #4 – COVER – G–2 – FORCE MAIN SYSTEM – BID SET.DWG
DATE: 9/19/24 | SCALE: AS SHOWN

SHEET G–2
DRAWING No. 2 OF 11

RER–DERM NOTES ON WATER–SEWER INSTALLATION

1. A HORIZONTAL DISTANCE OF AT LEAST 6 FEET, AND PREFERABLY 10 FEET (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE SEWER PIPES AND WATER PIPES. THE MINIMUM HORIZONTAL SEPARATION CAN BE REDUCED TO 3 FEET FOR VACUUM–TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE TOP OF THE SEWER PIPE IS AT LEAST 6 INCHES BELOW THE BOTTOM OF THE WATER PIPE. WHEN THE ABOVE SPECIFIED HORIZONTAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF:
   A– THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
   B– THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.
   C– THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER PIPE.

2. A VERTICAL DISTANCE OF AT LEAST 12 INCHES (OUTSIDE TO OUTSIDE) SHALL BE MAINTAINED BETWEEN ANY WATER AND SEWER MAINS WITH SEWER PIPES PREFERABLY CROSSING UNDER WATER MAINS. THE MINIMUM VERTICAL SEPARATION CAN BE REDUCED TO 6 INCHES FOR VACUUM–TYPE SEWERS OR FOR GRAVITY SEWERS WHERE THE SEWER PIPE IS BELOW THE WATER MAIN. THE CROSSING SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 6 FEET FROM ALL JOINTS IN GRAVITY AND PRESSURE SEWER PIPES. THE DISTANCE CAN BE REDUCED TO 3 FEET FOR VACUUM–TYPE SEWERS. WHEN THE ABOVE SPECIFIED VERTICAL DISTANCE CRITERIA CANNOT BE MET DUE TO AN EXISTING UNDERGROUND FACILITY CONFLICT, SMALLER SEPARATIONS ARE ALLOWED IF:
   A– THE SEWER PIPES ARE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER PIPE AND PRESSURE TESTED AT 150 PSI.
   B– THE SEWER IS ENCASED IN A WATERTIGHT CARRIER PIPE OR CONCRETE.

3. IN HIGHLY CONGESTED AREAS, WHERE EITHER WATER OR SEWER FACILITIES ARE EXISTING AND THE SEPARATION REQUIREMENTS CANNOT BE MET, SPECIAL CONSIDERATION MAY BE GIVEN SUBJECT TO SUBMITTAL OF DOCUMENTATION SHOWING THAT THE PROPOSED ALTERNATIVE WILL RESULT IN AN EQUIVALENT LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION.

4. THE MAXIMUM ALLOWABLE EXFILTRATION RATE OF GRAVITY SANITARY SEWERS CONSTRUCTED IN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE FIFTY (50) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY FOR RESIDENTIAL LAND USE AND TWENTY (20) GALLONS PER INCH PIPE DIAMETER PER MILE PER DAY FOR NON–RESIDENTIAL LAND USE.

5. FORCE MAIN SEWERS CONSTRUCTED IN A PUBLIC WELLFIELD PROTECTION AREA SHALL BE EITHER DUCTILE IRON OR REINFORCED CONCRETE PRESSURE SEWER PIPES.
   FOR DUCTILE IRON PIPE EXFILTRATION RATE SHALL NOT BE GREATER THAN THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AMERICAN WATER WORKS ASSOCIATION STANDARD (AWWAS) C600–82 AT TEST A PRESSURE OF 100 PSI.
   FOR REINFORCED CONCRETE PRESSURE SANITARY SEWER EXFILTRATION RATE SHALL NOT BE GREATER THAN HALF (½) THE ALLOWABLE LEAKAGE RATE SPECIFIED IN AWWA C600–82 AT A TEST PRESSURE OF 100 PSI.

6. THE CONTRACTOR SHALL VERIFY NATURE, DEPTH, AND CHARACTER OF EXISTING UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

7. ALL OTHER PUBLIC OR PRIVATE UTILITY FACILITIES SHALL BE CONSTRUCTED AT LEAST 5 FEET FROM ANY WATER AND SEWER MAIN AS MEASURED FROM THE OUTSIDE BELL OF THE WATER OF THE UTILITY PIPE.

8. WHEN THE 5 FEET SEPARATION BETWEEN PROPOSED AND EXISTING LINE IS NOT POSSIBLE, THE CONTRACTOR SHALL HAND DIG OR EXPOSE THE WATER AND SEWER PIPES BEFORE PROCEEDING WITH POWER EQUIPMENT EXCAVATION.–

9. IN NO CASE SHALL A CONTRACTOR INSTALL UTILITY PIPES, CONDUITS, CABLES, ETC. IN THE SAME TRENCH PARALLEL AND ABOVE AN EXISTING WATER OR SEWER PIPE EXCEPT WHERE THEY CROSS. ANY DEVIATION FROM NOTES 6, 7 AND 8 SHALL BE APPROVED IN WRITING BY THE RESPONSIBLE WATER AND SEWER UTILITY.

10. A NON–RESETTABLE ELAPSED TIME METER SHALL BE INSTALLED AT EACH PUMP TO RECORD THE TOTAL NUMBER OF OPERATING HOURS OF THE STATION.

11. IF ANY AREA OF THE WORK SITE IS FOUND TO CONTAIN BURIED SOLID WASTE AND / OR GROUND OR GROUND WATER CONTAMINATION, THE FOLLOWING SHALL APPLY:

    a) ALL WORK IN THE AREA SHALL FOLLOW ALL APPLICABLE SAFETY REQUIREMENTS (E.G., OSHA, ETC.) AND NOTIFICATION MUST BE PROVIDED TO THE APPROPRIATE AGENCIES.

    b) IMMEDIATELY NOTIFY THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION (EMRD). THE EMRD CAN BE CONTACTED AT (305) 372–6700.

    c) IF CONTAMINATED SOILS AND/OR BURIED SOLID WASTE MATERIAL IS EXCABATED DURING CONSTRUCTION, THEN THEY REQUIRE PROPER HANDLING AND DISPOSAL IN ACCORDANCE WITH THE LOCAL, STATE AND FEDERAL REGULATIONS. BE ADVISED THAT THE LANDFILL OWNER/OPERATOR IS THE FINAL AUTHORITY ON DISPOSAL AND MAY HAVE REQUIREMENTS BEYOND THOSE PROVIDED BY HEREIN. IF DISPOSAL WITHIN A MIAMI–DADE COUNTY OWNED LANDFILL (CLASS I LANDFILL) IS APPROPRIATE AND SELECTED, PLEASE CONTACT THE MIAMI–DADE COUNTY DEPARTMENT OF PUBLIC WORKS AND WASTE MANAGEMENT AT (305) 594–1670 FOR INFORMATION.

    d) THE REUSE OF CONTAMINATED SOLIDS THAT ARE NOT RETURNED TO THE ORIGINAL EXCAVATION REQUIRES PRIOR APPROVAL OF A SOIL MANAGEMENT PLAN FROM THE ENVIRONMENTAL MONITORING AND RESTORATION DIVISION. THE EMRD CAN BE CONTACTED A T (305) 372–6700.

MIAMI–DADE WATER AND SEWER DEPARTMENT
DESIGN AND CONSTRUCTION STANDARD DETAILS

FOR	SEE DETAIL	SHEET
TYPICAL TIE–ROD DETAILS	GS 1.0	1 OF 1
STANDARD REQUIREMENTS FOR WATER & SEWER MECHANICAL THRUST RESTRAINT	GS 2.0	1 OF 1
NEW CONNECTION TO EXISTING MANHOLE (WHERE NO STUB–OUT EXISTS)	SS 6.2	1 OF 1
AUTOMATIC AIR RELEASE VALVE ASSEMBLY – SEWAGE FORCE MAINS	SS 11.0	1 OF 2
NO. 53 C.I. VALVE BOX AND LID	SS 13.0	1 OF 1
TYPICAL PLUG VALVE INSTALLATION	SS 19.1	1 OF 1

NOTES:

1. THE ABOVE LIST SHALL NOT BE CONSIDERED AS NECESSARILY COMPLETE, NOR SHALL THE STANDARD DETAILS WHICH MAY BE INCLUDED ELSEWHERE HEREIN BE CONSIDERED AS FORMING A COMPLETE LISTING OF ALL STANDARD DETAILS WHICH MAY APPLY TO THIS PROJECT.
2. ALL STANDARD DETAILS ARE INCORPORATED IN THE ABOVE LIST BY REFERENCE AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE MDWASD STANDARD DETAILS.

LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- G — Exist. Gas
- ℄ — Center Line
- B — Base Line
- ℄&B — Center Line And Base Line
- M — Monument Line
- S — Section Line
- R/W — Right Of Way Line
- P — Property Line
- TEL — Exist. Telephone
- U/G — Exist. Electric Underground
- CATV — Exist. Cable Underground
- Exist. Chainlink Fence
- REQ'D. — Required
- O/S — Offset
- D.I. — Ductile Iron
- REST. J. — Restrained Joint
- Exist. Guy Wire Anchor
- Exist. Street Light Pole
- Exist. Utility Conc. Pole
- Exist. Utility Pole
- Exist. Flood Light
- Exist. Traffic Light Pole
- Exist. Pedestrian Crossing Light
- E — Exist. Electric Box
- LT — Exist. Street Light Box
- T — Exist. Telephone Box
- TR — Exist. Traffic Signal Box
- TV — Exist. Cable TV Box
- Exist. C.B.
- (E) — Exist. Electric MH
- (S) — Exist. Storm MH
- (S) — Exist. Sanitary MH
- (T) — Exist. Telephone MH
- (W) — Exist. Water MH
- Exist. Well
- Exist. Sprinkler
- Exist. Fire Hydrant
- Exist. Valve
- Core Boring
- Exist. Sign
- W — Exist. Single Water Meter
- Limits of Milling and Resurfacing Pavement Restoration
- Limits of Brick Restoration
- Exist. Tree
- Exist. Palm
- Exist. Hedge
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Exist. Catch Basin
- Exist. Storm Pipe

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S.S.O.C.O.F. DESIGN TICKET No.247005537.
DATE: 09/03/2020

CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

GENERAL PLAN & NOTES

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	AD
PERMIT SET	X	01/19/23	AD
BID SET	X	09/18/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753–2605

PROJECT No: 19–00098
PCTS No:
FILE NAME: OPA–LOCKA–TASK #4 – COVER – G–00 – FORCE MAIN SYSTEM – BID SETJMG
DATE: 9/19/24 | SCALE: AS SHOWN

SHEET G–3
DRAWING No. 3 OF 11



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300 ENGINEERING GROUP LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS FORCE MAIN SYSTEM

KEY PLAN FORCE MAIN SYSTEM

DRAWING HISTORY

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90%	X	12/16/22	AD
PERMIT SET	X	01/19/23	AD
BID SET	X	09/18/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

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2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

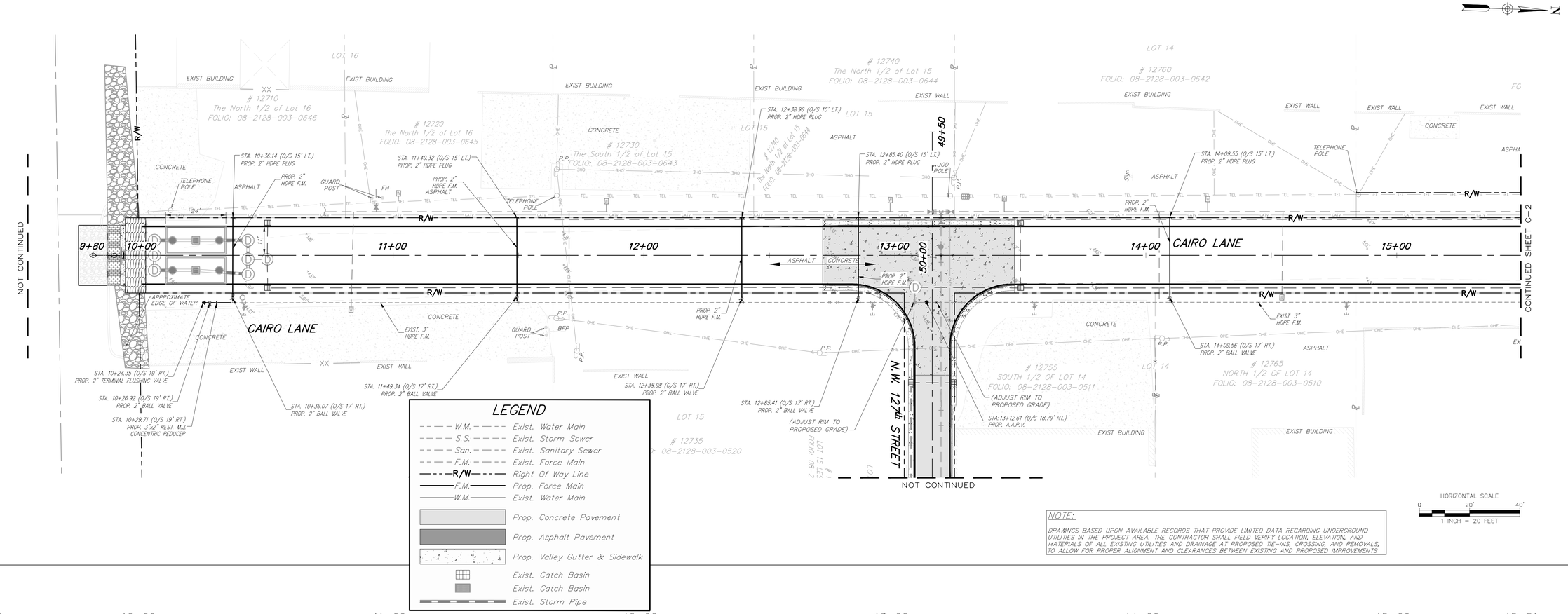
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – COVER – G-00 – FORCE MAIN SYSTEM – BID SET.DWG

DATE: 9/19/24 | SCALE: AS SHOWN

SHEET G-4

DRAWING No. 4 OF 11



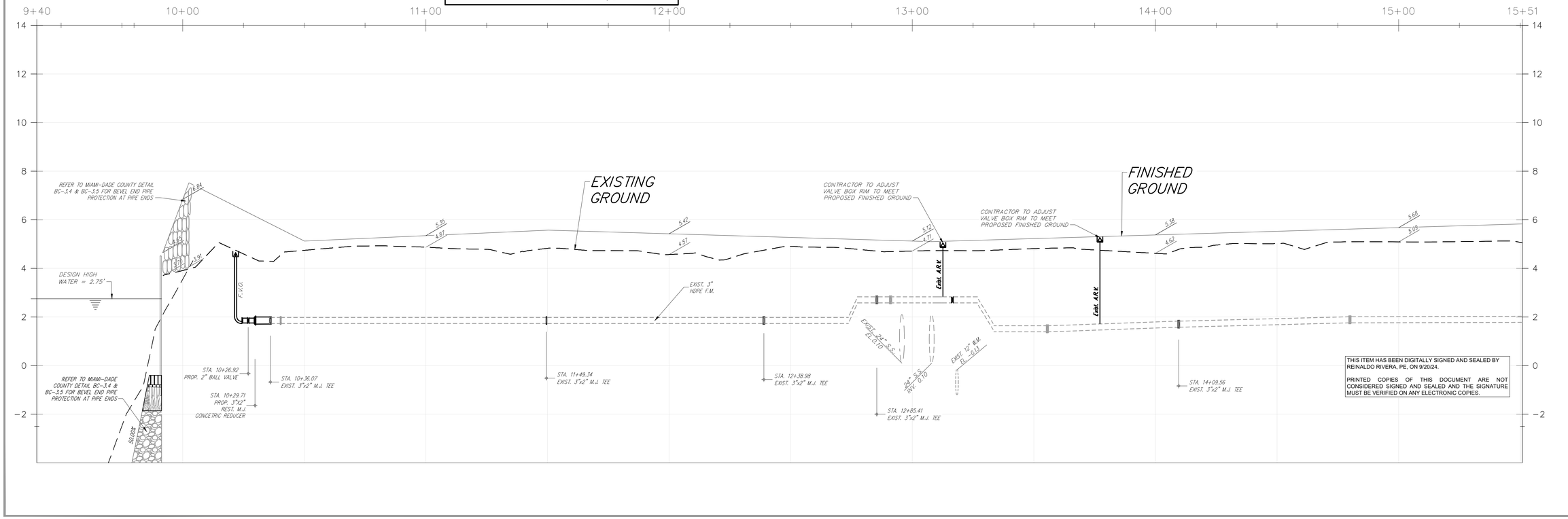
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- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Exist. Catch Basin
- Exist. Storm Pipe

HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

NOTE:

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS FORCE MAIN SYSTEM

PLAN AND PROFILE FORCE MAIN IMPROVEMENTS

DRAWING HISTORY

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REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD CHECKED: LJ

DRAWN: RE FINAL CHECK: RR

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PROJECT No: 19-00098

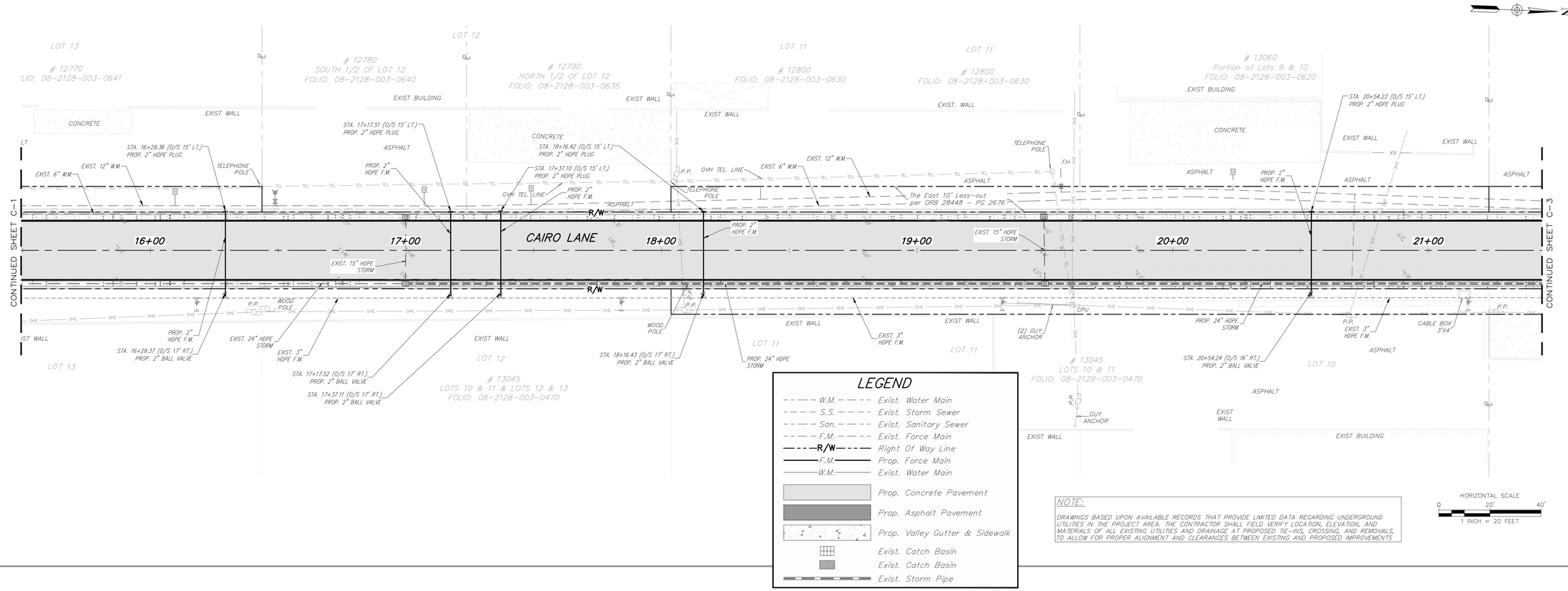
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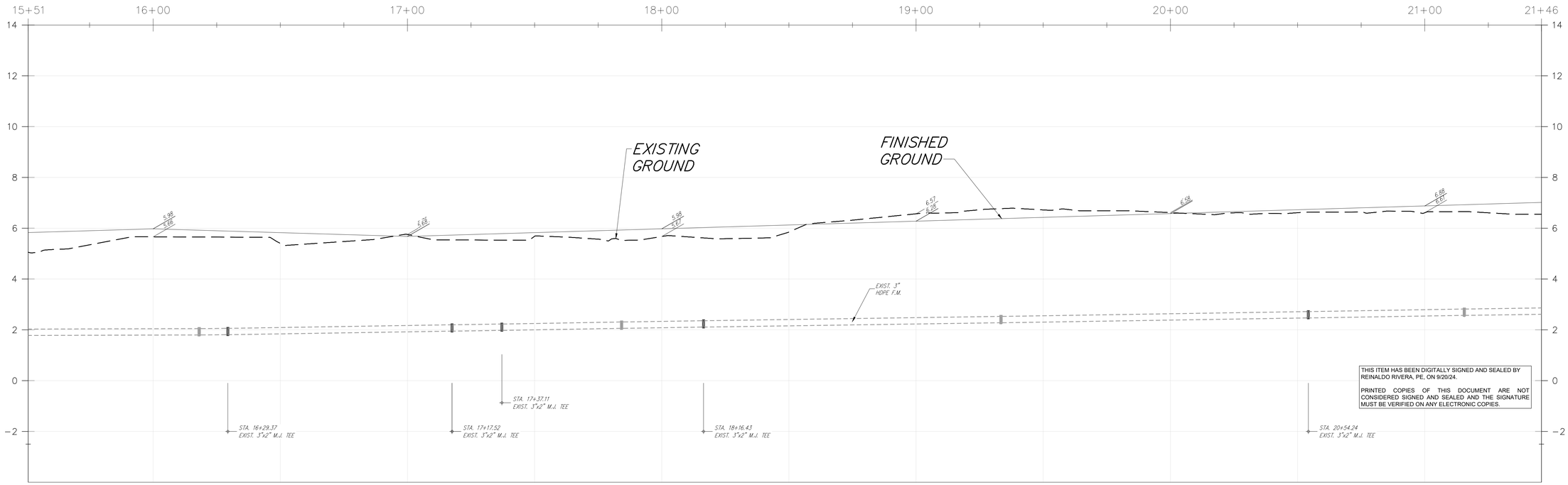
FILE NAME: OPA-LOCKA-TASK #4 – FORCE MAIN - BID SET.DWG

DATE: 9/20/24 SCALE: AS SHOWN

SHEET C-1

DRAWING No. 5 OF 11





CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS FORCE MAIN SYSTEM

PLAN AND PROFILE FORCE MAIN IMPROVEMENTS

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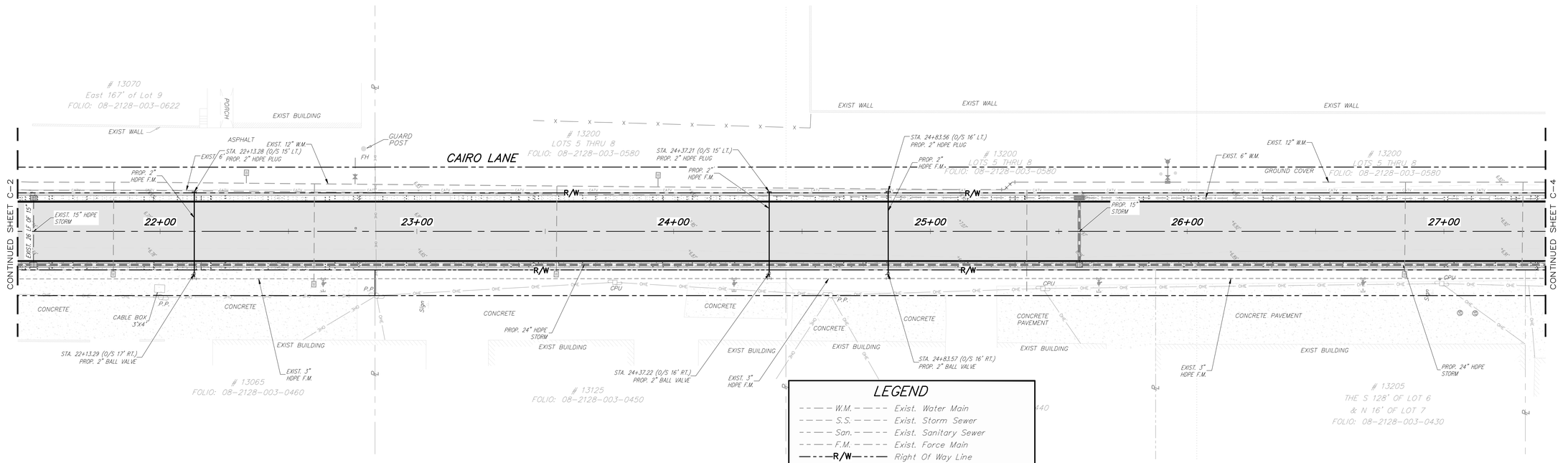
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(305) 753-2605

PROJECT No: 19-00098
PCTS No:
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DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-2

DRAWING No. 6 OF 11



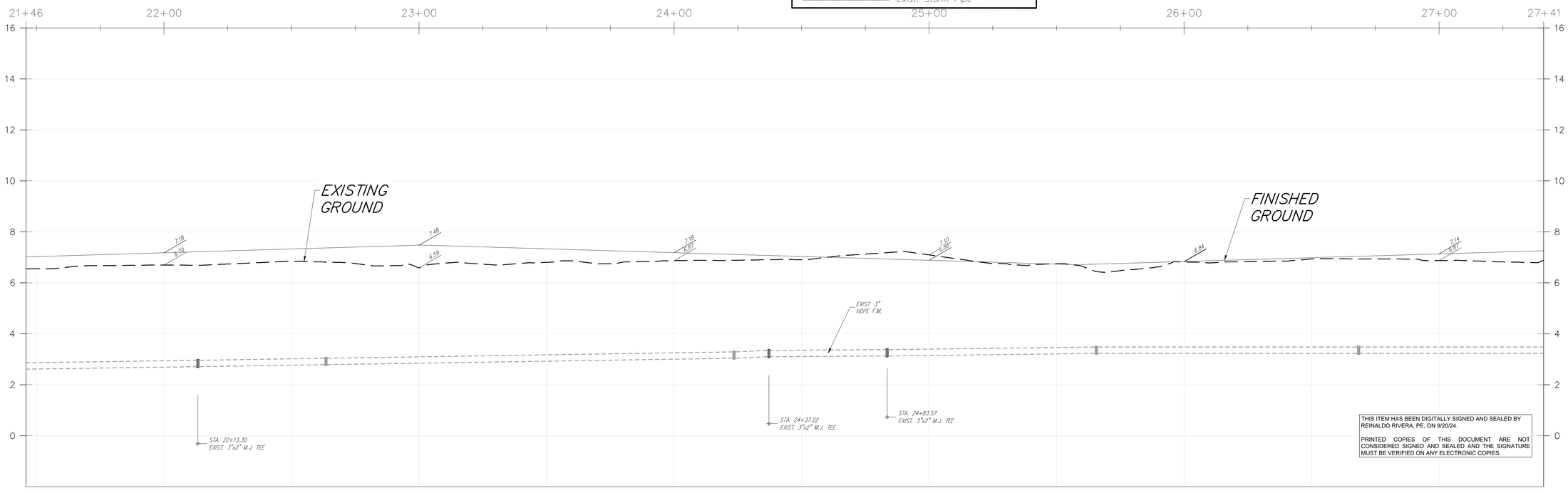
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- F.M. — Exist. Force Main
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HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS FORCE MAIN SYSTEM

PLAN AND PROFILE FORCE MAIN IMPROVEMENTS

DRAWING HISTORY

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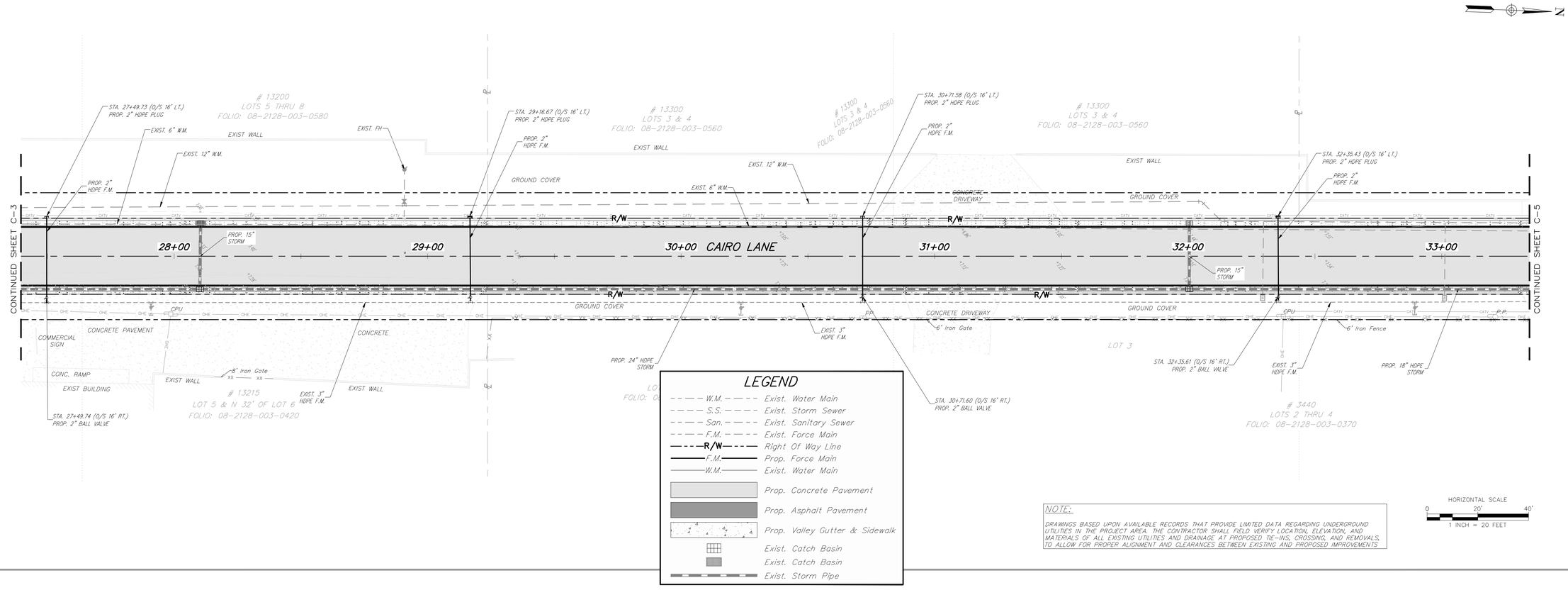
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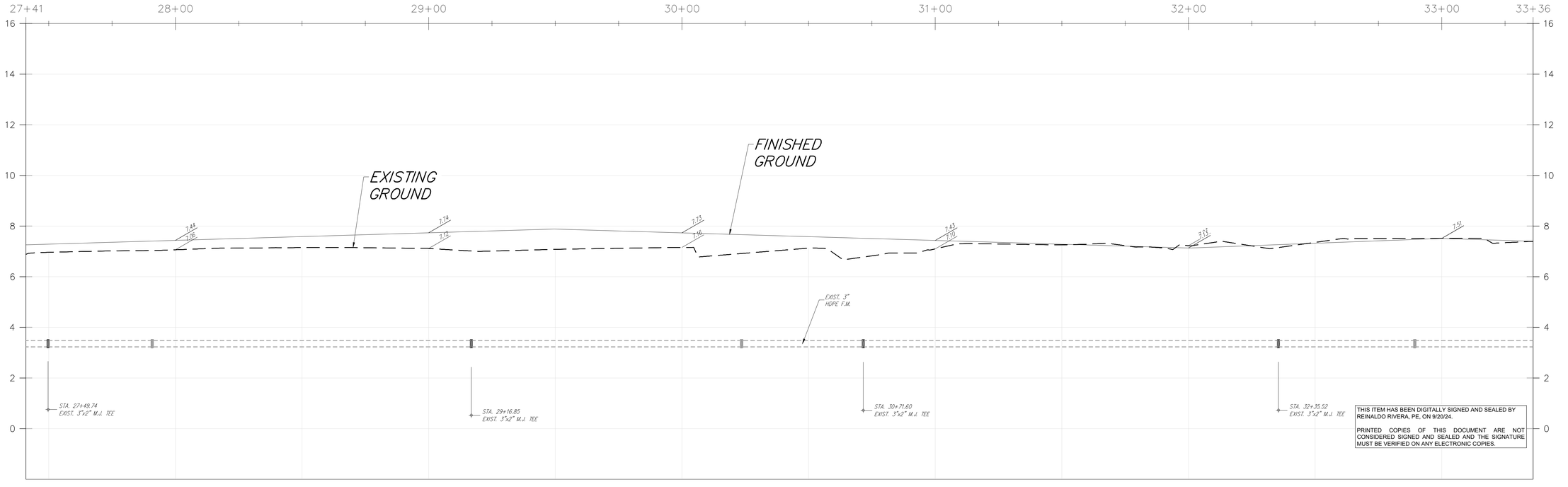
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(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - FORCE MAIN - BID SET.DWG
DATE: 9/20/24 SCALE: AS SHOWN

SHEET C-3
DRAWING No. 7 OF 11





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PLAN AND PROFILE FORCE MAIN IMPROVEMENTS

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PROJECT MGR.:
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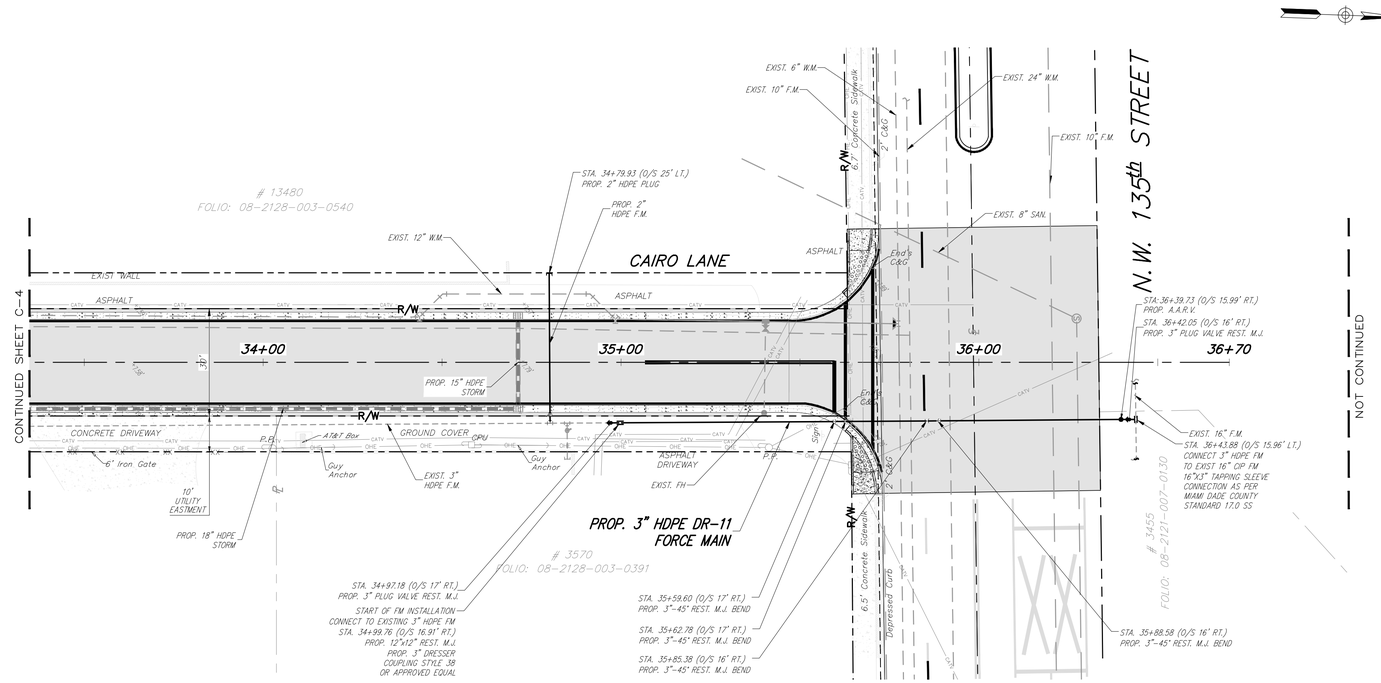
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PROJECT No: 19-00098
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SHEET C-4

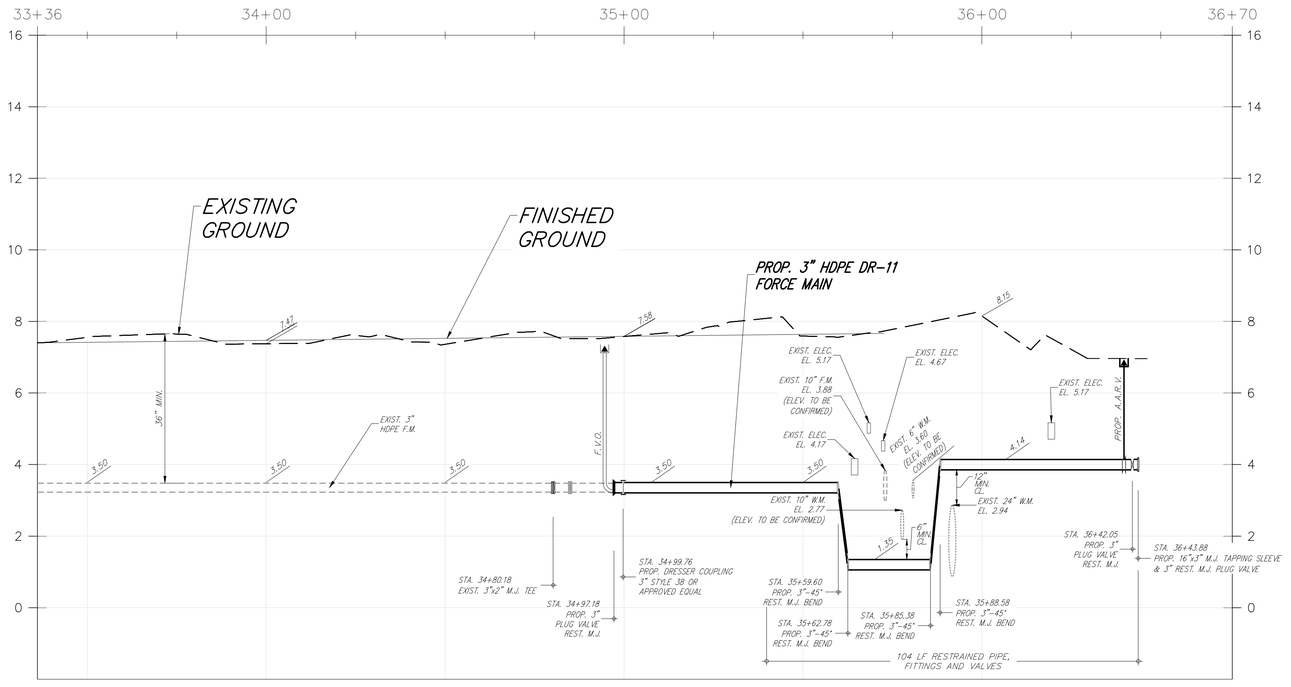
DRAWING No. 8 OF 11



NOTE:

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HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



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- Exist. Catch Basin
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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

PLAN AND PROFILE FORCE MAIN IMPROVEMENTS

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CHECKED: LJ
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FINAL CHECK: RR

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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - FORCE MAIN - BID SETJWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET
C-5

DRAWING No.
9 OF 11

LOCATION OF PUBLIC WATER SYSTEM MAINS ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL LENGTH OF PIPE CENTERED)
Storm Sewer; Stormwater Force Main; Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum.	Alternate: 3 ft minimum Water Main
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate: 3 ft minimum Water Main
Gravity or Pressure; Sanitary Sewer Force Main; Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum.	Alternate: 6 ft minimum Water Main
On-Site Sewage Treatment & Disposal System	10 ft minimum	-	-

NOTES:
(1) WATER MAIN SHOULD BE ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(3) 3 FT. GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

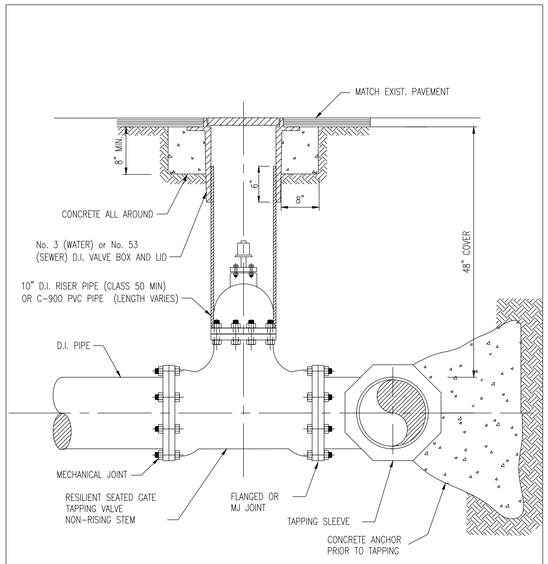
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
10/1/2017	D.V.

STANDARD DETAIL
POTABLE WATER MAIN, WASTEWATER & STORM SEWER CONFLICT

GS 1.5 — SHEET 1 OF 2



NOTES:
1. RESILIENT SEATED GATE TAPPING VALVE CAN BE USED FOR SEWER CONNECTION.
2. 18" CLEARANCE FROM FITTINGS AND BELLS.
3. TAPPING VALVE AND SLEEVE SHALL BE PRESSURE TESTED AT 150 "psi" PRIOR TO BEING TAPPED.
4. TAPPING ON CONCRETE MAINS SHALL BE PRESSURE TESTED AT A LOWER PRESSURE THAN THE ACTIVE OPERATING PRESSURE OF THE MAIN.

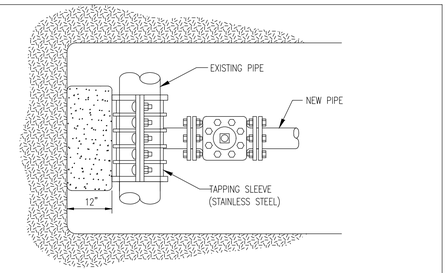
ITEM	CROSS REF.	SPEC. REF.
No.53 Valve Box	SS 13.0	
No.3 Valve Box INSTALLATION	WS 3.11 GS 1.8	

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

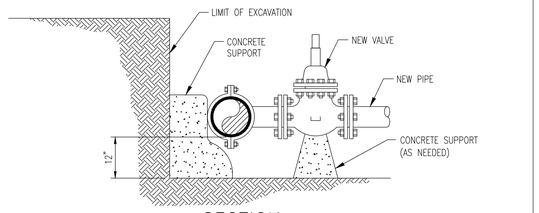
ISSUE DATE	APPROVED BY
01/22/2009	V.F.C.
07/20/2016	D.V.

STANDARD DETAIL
TYPICAL TAPPING VALVE SETTING (16" AND SMALLER)

GS 1.7 — SHEET 1 OF 1



PLAN VIEW



SECTION

PROCEDURE:
1. CONTRACTOR TO INSTALL AND PRESSURE TEST TAPPING SLEEVE AND VALVE, WITNESSED BY M-D.WASD INSPECTOR.
2. ALL TAPS LARGER THAN 20 INCHES SMALL BE DONE BY A TAPPING SPECIALIST WITH CREDENTIALS ACCEPTABLE TO THE DEPARTMENT.
3. CONTRACTOR TO SUPPLY EQUIPMENT TO HANDLE TAPPING MACHINE & DEWATERING EQUIPMENT.
4. 18" CLEARANCE FROM FITTINGS AND BELLS.
5. TAPPING VALVE AND SLEEVE SHALL BE PRESSURE TESTED AT 150 psi PRIOR TO BEING TAPPED.

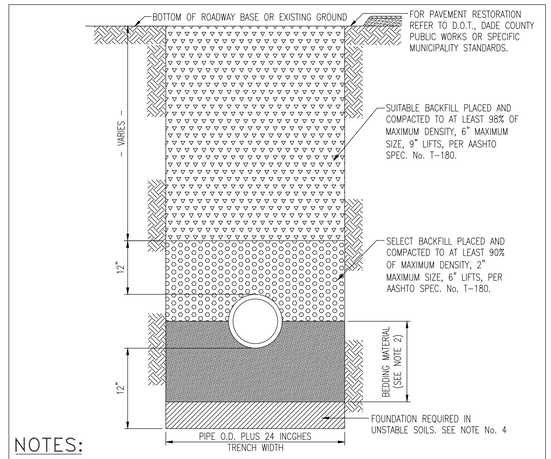
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
01/22/2009	V.F.C.
07/20/2016	D.V.

STANDARD DETAIL
TAPPING SLEEVE AND VALVE INSTALLATION (PROPOSED)

GS 1.8 — SHEET 1 OF 1



NOTES:
1. FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.
2. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, OR WASHED AND GRADED LIMEROCK (3/8"-#8"), COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. No. T-180.
3. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
4. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS BELOW THE WATER TABLE, A FOUNDATION IS REQUIRED. COMPACTED TO AT LEAST 90% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-180. FOUNDATION MATERIAL SHALL BE SELECT BACKFILL MATERIAL, 2" MAXIMUM SIZE 6" LIFTS EXTEND EXCAVATION AT LEAST 2' DEEPER FOR FOUNDATION UNLESS SUITABLE MATERIAL IS FOUND AT A LESSER DEPTH, GREATER DEPTHS MAY BE REQUIRED FOR EXTREMELY POOR CONDITIONS.
5. POLYETHYLENE ENCASEMENT OF CAST IRON VALVES, PIPE AND FITTINGS, IF REQUIRED BY THE DEPARTMENT, SHALL BE PER ANSI/AWWA C105/A21.5, METHOD A, B OR C FOR TYPE 1 CLASS C TUBE, MIN. 8 MILS

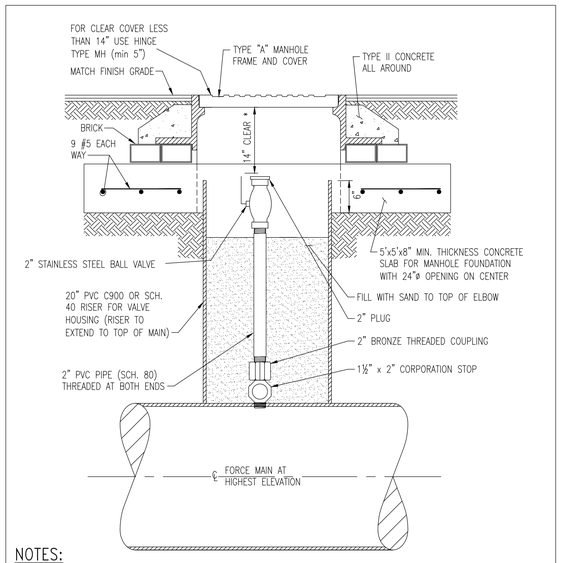
ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day

ISSUE DATE	APPROVED BY
11/01/2006	V.E.F.

STANDARD DETAIL
TYPICAL TRENCH BACKFILL FOR D.I. WATER AND FORCE MAINS

GS 1.9 — SHEET 1 OF 1



NOTES:
1. AUTOMATIC AIR RELEASE VALVES ARE REQUIRED UNLESS APPROVED BY DEPARTMENT. MANUAL AIR RELEASE VALVES ARE ONLY USED WHERE GROUND COVER DOES NOT ALLOW FOR AN AUTOMATIC ARV OR AT LOCATIONS REQUIRED TO BLEED THE F.M FOR TESTING.
2. AIR RELEASE RISER AND PVC PIPE HOUSING SHALL BE PLACED AND MAINTAINED IN VERTICAL POSITION.
3. METALLIC THREADS TO BE COATED WITH BITUMASTIC COATING.
4. INSTALL TAPPING SADDLE FOR THICKNESS CLASS D.I. MAINS 4" & SMALLER, PRESSURE CLASS D.I. MAINS 8" & SMALLER, OR WHEN MAIN IS PVC, HDPE, OR AC PIPE.
5. FOR MANHOLE/VALVE BOX IN GRASS AREAS, SEE SS 21.0 SHEET 1 OF 1.

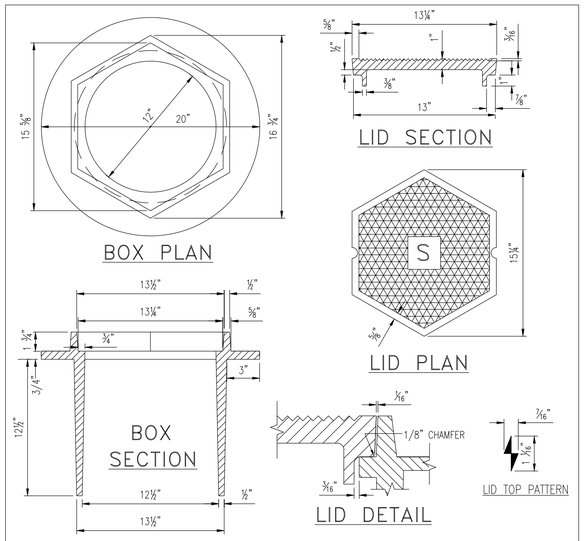
ITEM	CROSS REF.	SPEC. REF.
TYPE "A" MANHOLE	SS 4.0	

MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
6/29/2011	F.A.
1/22/2019	D.V.

STANDARD DETAIL
MANUAL AIR RELEASE VALVE ASSEMBLY IN PAVED AREAS FOR SEWAGE FORCE MAINS

SS 11.0 — SHEET 1 OF 2



NOTES:
1. MACHINE FINISH BOTTOM OF COVER AND SEAT OF FRAME.
2. ALL DIMENSIONS ARE NET CASTING, NOT PATTERN.
3. FOUNDRY AND LOCATION SHALL BE CAST ON BOTTOM OF THE LID. (SEE WS 2.05)
4. MINIMUM WEIGHTS: RING: 134LBS COVER: 44LBS

XXXXX ITEM	CROSS REF.	SPEC. REF.

MIAMI-DADE COUNTY — Delivering Excellence Every Day

ISSUE DATE	APPROVED BY
06/25/2015	J.B.F.

STANDARD DETAIL
No. 53 C.I. VALVE BOX AND LID

SS 13.0 — SHEET 1 OF 1

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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

STANDARD DETAILS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	AD
PERMIT SET	X	01/19/23	AD
BID SET	X	09/18/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD CHECKED: LJ
DRAWN: RE FINAL CHECK: RR

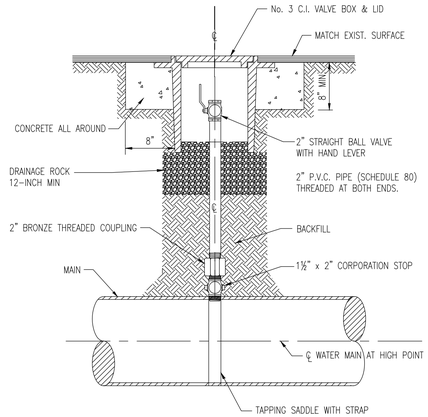
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - STANDARD DETAILS - SEWER.DWG
DATE: 9/19/24 SCALE: AS SHOWN

SHEET C-6

DRAWING No. 10 OF 11



No. 3 VALVE BOX & LID	WS 3.11	
ITEM	CROSS REF.	SPEC. REF.

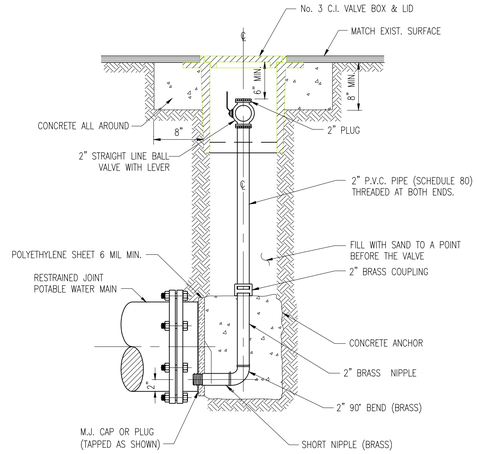
ISSUE DATE	APPROVED BY
10/06/2009	V.F.C.
06/09/2016	D.V.

MIAMI-DADE COUNTY Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

STANDARD DETAIL

MANUAL AIR RELEASE VALVE

WS 1.60
SHEET 1 OF 1



NOTES:

1. 2" TAP IN BOTTOM OF PLUG.
2. ALL BRASS TO BE "LEAD FREE".

NO. 3 VALVE BOX & LID	WS 3.11	
CONC. ANCHORS	GS 1.1	
ITEM	CROSS REF.	SPEC. REF.

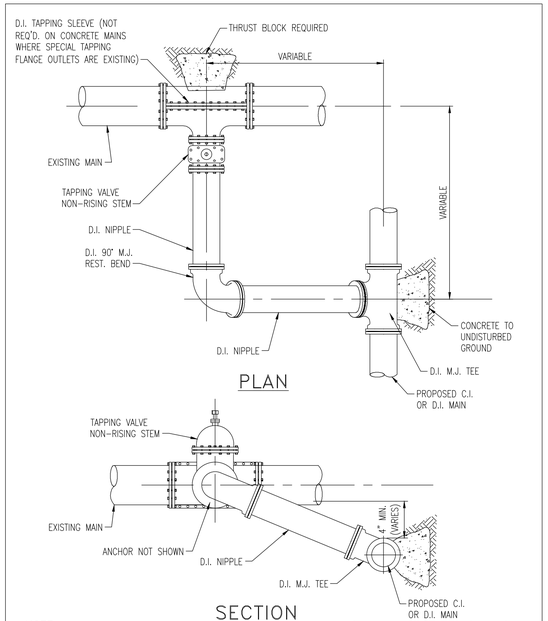
ISSUE DATE	APPROVED BY
10/06/2009	V.F.C.
10/1/2017 M.K.	D.V.

MIAMI-DADE COUNTY Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

STANDARD DETAIL

TYPICAL 2" FLUSHING VALVE OUTLET

WS 1.61
SHEET 1 OF 1



NOTE:
1. ALL PIPE AND FITTINGS TO BE RESTRAINED.

ITEM	CROSS REF.	SPEC. REF.

ISSUE DATE	APPROVED BY
06/20/2008	V.F.C.

MIAMI-DADE COUNTY Delivering Excellence Every Day
WATER & SEWER DEPARTMENT

STANDARD DETAIL

TYPICAL CONNECTION TO EXISTING MAIN

WS 4.12
SHEET 1 OF 2

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CITY OF OPA LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

STANDARD DETAILS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	AD
PERMIT SET	X	01/19/23	AD
BID SET	X	09/18/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - STANDARD DETAILS - SEWER.DWG
DATE: 9/19/24 | SCALE: AS SHOWN

SHEET C-7

DRAWING No. 11 OF 11

CITY OF OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM
SEPTEMBER 2024

UTILITY PROVIDERS

MIAMI DADE WATER & SEWER
MIAMI-MADE WATER & SEWER DEPARTMENT
3575 SOUTH LEJEUNE ROAD
MIAMI, FL 33146
CONTACT: MR. LAZARO GUERRA
PHONE: (786) 268-5273

POWER
FLORIDA POWER & LIGHT
10705 QUAIL ROOST DR.
MIAMI, FL 33157
CONTACT: EDGAR AGUILAR
PHONE: (305) 378-2634

TELEPHONE
AT&T/DISTRIBUTION
6628 LAKESIDE RD
WEST PALM BEACH, FL, 33411
CONTACT: DINO FARRUGGIO
PHONE: (561) 683-2729

STORM DRAINAGE PERMITING
MIAMI DADE COUNTY DEPARTMENT OF REGULATORY & ECONOMIC RESOURCES
701 NW 1ST COURT
MIAMI, FL 33166
PHONE: (305) 372-6789

GAS
FLORIDA CITY GAS
4045 NW 97TH AVE
DORAL, FL 33178
CONTACT: MR. GUSTAVO PEÑA
PHONE: (305) 835-3618

CABLE
VERIZON
3301 MATRIX DRIVE SUITE 100
RICHARDSON, TX 75082
CONTACT: TODD MARS
PHONE: (786) 236-8597

DESIGN TEAM

CIVIL ENGINEER
300 ENGINEERING GROUP
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FL 33134

SURVEYOR
BELLO & BELLO LAND SURVEYING CORP.
2230 SW 131ST AVE., SUITE 201
MIAMI, FL 33186

OWNER
CITY OF OPA LOCKA
780 FISHERMAN STREET,
4TH FLOOR OPA-LOCKA, FL 33054

GEOTECHNICAL
UNIVERSAL ENGINEERING SCIENCES
1215 WALLACE DRIVE
DELRAY BEACH, FLORIDA 33444

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S.S.O.C.O.F. DESIGN TICKET No.247005537.
DATE: 09/03/2020



LOCATION PLAN
MIAMI-DADE COUNTY PORTION OF SEC. 35 - TWP. 51 S. - RGE 42 E.
N.T.S.

COMMUNITY OFFICIALS
VERONICA J. WILLIAMS, MAYOR

JOHN H. TAYLOR JR., VICE MAYOR
DR. SHERELEAN BASS, COMMISSIONER
CHRIS DAVIS, COMMISSIONER
AUDREY DOMINGUEZ, COMMISSIONER

AIRIA AUSTIN
PUBLIC WORKS & CIP DIRECTOR
CITY OF OPA-LOCKA PUBLIC WORKS DEPARTMENT
780 FISHERMAN STREET
OPA-LOCKA, FL 33054

INDEX SHEET

G1	TITLE SHEET
G2	NOTES & LEGEND
G3	KEY SHEET
G4	POLLUTION PLAN CAIRO LANE
G5	POLLUTION PLAN NW 127TH ST
C1 TO C5	ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C6 TO C9	ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C10	ROADWAY PLAN NW 32ND AVE
C11 TO C15	CROSS SECTIONS - CAIRO LN
C16 TO C19	CROSS SECTIONS - NW 127TH STREET
C20 TO C21	TYPICAL CROSS SECTIONS
C22	PROPOSED OUTFALL DETAIL
C23 TO C26	STANDARD DETAILS
C27	EROSION CONTROL NOTES & DETAILS
C28 TO C32	STORMWATER POLLUTION PREVENTION PLAN
C33 TO C37	SIGNING AND PAVEMENT MARKINGS
C38	MAINTENANCE OF TRAFFIC PLANS NOTES AND DETAILS

Reinaldo J. Rivera-Reyes
Digitally signed by Reinaldo J. Rivera-Reyes
DN: cn=Reinaldo J. Rivera-Reyes, O="300 Engineering Group, P.A.", L=Coral Gables, S=Florida, C=US
Reason: I AM AUTHOR OF THIS DOCUMENT
Date: 2024.09.20 18:56:08-04'00'

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 9/20/24.

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REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
State of Florida – License No. 83476
2222 Ponce de Leon Blvd, Suite 300
Coral Gables, Florida 33134
(305) 753-2605

300 ENGINEERING GROUP, LLC

BID SET

A.D. SR. PROG. MGR.	D.J.S. ENG. HEAD	R.R. CONST. HEAD	PROJECT No. 20-0324200
DRAWN: R.A.E.	DATE: 9/20/24	SHEET 1	OF 43
FILE NAME: OPA-LOCKA-TASK #4 – COVER – G-01 – ROAD AND DRAINAGE – BID SET.DWG		DWG. No.	G-1

GENERAL NOTES

1. THE FOLLOWING UTILITY COMPANIES SHOULD BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION IN AREA:

   –AT&T DISTRIBUTION
   –AT&T COMMUNICATIONS
   –CITY OF OPA–LOCKA
   –COMCAST CABLE
   –CROWN CASTLE
   –FLORIDA CITY GAS
   –HOTWIRE COMMUNICATIONS.
   –MIAMI DADE WATER & SEWER
   –FLORIDA POWER & LIGHT
   –DADE COUNTY–PUBLIC WORKS DEPARTMENT
   –VERIZON

2. THE ELEVATIONS SHOWN REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929).

3. EXISTING UNDERGROUND UTILITIES ON THE DRAWINGS HAVE BEEN SHOWN BASED UPON THE BEST AVAILABLE INFORMATION. THE ENGINEER AND THE CITY DO NOT GUARANTEE THE ACCURACY OR THE INCLUSIVENESS OF THIS DATA. THE CONTRACTOR IS REQUIRED TO MARK AND CLEARLY DELINEATE LOCATIONS OF EXISTING UTILITIES WITHIN AREAS OF WORK PRIOR TO EXCAVATION TO AVOID DAMAGE. THE CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO IDENTIFY, LOCATE AND MARK EXISTING UTILITIES BY FIELD VERIFICATION, (E.G. SOFT DIGGING) COORDINATION WITH UTILITY COMPANIES AND ELECTRONIC OR OTHER SUCH DETECTION TECHNOLOGY AND MEANS AND SHALL BEAR ALL COSTS FOR THIS WORK. THE ENGINEER OF RECORD AND THE CITY SHALL NOT BE HELD LIABLE FOR ANY UTILITY CONFLICTS AND UNKNOWNS THAT ARE DISCOVERED DURING CONSTRUCTION.

4. CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE CALL OF FLORIDA INC. BY CALLING 811 AT LEAST 48 HOURS PRIOR TO EXCAVATING.

5. SURVEYING PROVIDED BY BELLO & BELLO LAND SURVEYING CORP. STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.

6. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

7. THE ENGINEERING OF RECORD IS IN RESPONSIBLE CHARGE FOR THE DESIGN PART OF THIS PROJECT ONLY.

8. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE CITY OF OPA LOCKA PUBLIC WORKS DEPARTMENT AND/OR THE ENGINEER OF RECORD.

9. THE CONTRACTOR SHALL PROVIDE ACCESS AND ASSISTANCE TO CITY OF OPA–LOCKA INSPECTORS, ENGINEER OF RECORD, OR HIS DESIGNEE TO MAKE INSPECTIONS AS NECESSARY DURING CONSTRUCTION.

10. A DEWATERING PERMIT MUST BE OBTAINED BY THE CONTRACTOR WITH MD RER–DERM.

11. THE STATIONING SHOWN IS ALONG THE BASELINE OF SURVEY.

12. GRADING SHOWN ALONG THE PROPOSED ROADWAY PROFILES ARE AT THE ROADWAY CENTERLINE.

13. ALL HANDICAP RAMPS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT – LATEST EDITION.

14. ALL PAVEMENT MARKINGS SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES – LATEST EDITION, AND FDOT INDEX 700.

15. OPEN TRENCHE'S SHALL NOT BE LEFT OPEN WITHOUT ADEQUATE PROTECTION.

16. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE MDWASD HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.

17. IF EVIDENCE OF POTENTIAL CONTAMINATION IS DETECTED DURING EXCAVATION, STOP EXCAVATION WORK AND NOTIFY WASD HAZARDOUS MATERIALS MANAGEMENT SECTION AT (786) 552–8400 AND THE CONSTRUCTION CONTRACTS MANAGEMENT DIVISION AT (786) 268–5161. EVIDENCE OF POTENTIAL CONTAMINATION MAY INCLUDE ANY OF THE FOLLOWING: 1. ODOR 2. SOLID WASTE DEBRIS 3. SHEEN ON THE GROUNDWATER 4. STAINED OR SATURATED SOIL (SOIL THAT CONTAINS PRODUCT THAT DRAINS WHEN IT IS HANDLED OR CREATES STREAKS ON EXCAVATION TOOLS) OR 5. FREE FLOATING PRODUCT ON THE GROUNDWATER (OIL, DIESEL, GASOLINE, ETC.). MATERIAL THAT HAS ODOR, IS STAINED OR IS SATURATED MUST BE SEGREGATED ON AN IMPERMEABLE SURFACE FOR APPROPRIATE FUTURE DISPOSAL.

18. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE PLANS, CONTRACT SPECIFICATIONS, AND AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOO) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(4), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING FEATURES OUTSIDE OF THE WORKING AREA.

21. PAVEMENT RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH FDOT AND MIAMI–DADE COUNTY PUBLIC WORKS DEPARTMENT REQUIREMENTS UNLESS OTHERWISE NOTED.

22. MILLING AND RESURFACING PAVEMENT RESTORATION WILL BE AS SHOWN ON PLANS.

23. PROPOSED SITE GRADING ELEVATIONS SHALL BE WITHIN 0.1' OF STATED DESIGN PLAN ELEVATIONS.

24. ALL FILL MATERIAL SHALL BE IN ACCORDANCE WITH AASHTO N–145, FREE OF VEGETATION AND ORGANIC MATERIAL, CLASS A–1, A2–4, OR A–3.

25. THE MINIMUM LONGITUDINAL SLOPE OF PAVEMENT SHALL BE 0.3% OR AS SHOWN ON PLANS.

26. THE MINIMUM CROSS–SECTIONAL SLOPE OF PAVEMENT SHALL BE 2% FOR ROADWAYS.

27. ALL DRAINAGE STRUCTURES SHALL BE VACUUMED CLEAN AND PIPE SEGMENTS SHALL BE JETTED PRIOR TO CITY ACCEPTANCE.

28. ALL DRIVEWAY APPROACHES WITHIN THE RIGHT–OF–WAY SHALL BE RECONSTRUCTED.

29. ALL SIDEWALKS SHALL BE FOUR (4) INCHES THICK, EXCEPT IN DRIVEWAYS WHERE IT SHALL BE EIGHT (8) INCHES THICK. SUB–GRADE TO BE GRUBBED AND RECOMPACTED TO 98% OF MAXIMUM DRY DENSITY PER AASHTO–T–180.

30. ALL CONCRETE PAVEMENT SHALL HAVE A MINIMUM 5,000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED.

31. ALL EXISTING ORGANIC AND DELETERIOUS MATERIAL WITHIN THE RIGHT–OF–WAY AND UTILITY DRAINAGE EASEMENTS SHALL BE REMOVED TO THE FULL DEPTH.

32. THE SUBGRADE MATERIAL SUPPORTING THE ROADWAY SHALL HAVE A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 40. THE STABILIZED SUBGRADE SHALL BE TWELVE (12) INCHES COMPACTED TO 98% OF MAXIMUM DRY DENSITY PER AASHTO–T–180.

33. THE LIMEROCK BASE CURSE SHALL HAVE A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 100 AND SHALL BE A MINIMUM OF EIGHT (8) INCHES THICK AND HAVING A MINIMUM PERCENTAGE OF MAGNESIUM AND CALCIUM OF 60. BASE MATERIAL SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 98% OF MAXIMUM DRY DENSITY PER AASHTO–T–180 UNDER ALL PAVED AREAS.

34. BASE AND SUB–BASE DENSITY TESTS SHALL BE CONDUCTED FOR A MAXIMUM 7,000 SQUARE FEET OF FINISHED PAVEMENT.

35. THE CONTRACTOR MUST HAND EXCAVATE AROUND AREAS WHERE EXISTING UNDERGROUND UTILITIES ARE EXPECTED OR SUSPECTED IN ORDER TO AVOID DAMAGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND COSTS TO CORRECT DAMAGES RESULTING FROM FAILURE TO TAKE ALL NECESSARY PRECAUTIONS INCLUDING LOCATING, MARKING AND CAREFUL EXCAVATION. THE CONTRACTOR SHALL LOCATE ALL ELECTRICAL, STORMWATER, COMMUNICATION, SANITARY SEWER AND WATER LINES IN AREA OF WORK AND SHALL CUT AND RELOCATE WATER LINES AS NECESSARY TO COMPLETE THE WORK. CONTRACTOR TO REPAIR OR HAVE REPAIRED ANY EXISTING UTILITY LINE DAMAGED DURING WORK. LOCATION OF IRRIGATION/SPRINKLER LINES AND HEADS WERE NOT PROVIDED TO THE ENGINEER AND THEREFORE ARE NOT SHOWN ON THE PLANS.

36. IF THE CONTRACTOR IDENTIFIES ANY UTILIY CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER/ENGINEER–OF–RECORD AND THE ASSIGNED CITY OF OPA–LOCKA CONSTRUCTION MANAGER SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE CONFLICTS.

37. THE CONTRACTOR SHALL ACCURATELY RECORD THE LOCATION AND ELEVATIONS OF THE PIPE WORK AND EXISTING UTILITIES AND STRUCTURES ENCOUNTERED AND PROVIDE COMPLETE, NEAT AND ORDERLY AS–BUILT DATA PRIOR TO PROJECT CLOSE OUT.

38. THE CONTRACTOR SHALL PROVIDE PIPE LENGTHS TO MEET THE PROPOSED PIPE ALIGNMENTS AND TO AVOID CONFLICTS WITH EXISTING UTILITIES.

39. ALL EXISTING UTILITIES, MANHOLE COVERS, ELECTRICAL BOXES, VALVE BOXES, METER BOXES, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO GRADE ELEVATION, UNLESS OTHERWISE NOTED.

40. ALL SODDED AREAS, TREES, FENCES, MAILBOXES, DRIVEWAYS AND OTHERS ITEMS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.

41. ALL PIPES SHALL BE LAID IN A CLEAN, DRY TRENCH. DEWATERING AS REQUIRED SHALL BE AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATIONS SHALL COMPLY WITH OSHA'S EXCAVATION SAFETY STANDARDS AND THE FLORIDA TRENCH SAFETY ACT. DISCHARGE WATER SHALL NOT BE DIRECTED THROUGH THE PIPE BEING LAID. CONTRACTOR SHALL FURNISH THE OWNER WITH WRITTEN ASSURANCE THAT HE/SHE WILL COMPLY WITH THESE REGULATIONS.

42. PRIOR TO THE SHUTDOWN FOR TIE IN OF ANY STORMWATER PIPES, THE CITY SHALL PERFORM AN ONSITE INSPECTION TO VERITY: 1) SIZE OF PIPE AND 2) MATERIALS ONSITE. IF THIS INSPECTION DOES NOT OCCUR OR PARTS ARE MISSING, THE SHUTDOWN WILL BE CANCELED. THE CITY CAN, AT ANY TIME, CANCEL SCHEDULED SHUTDOWNS DUE TO INCLEMENT WEATHER EVENTS AND/OR SPECIAL EVENTS.

43. IN AREAS WHERE POLLUTED GROUND WATER WILL OR MAY BE DRAWN INTO THE DEWATERING SYSTEM AND THE CITY OF OPA–LOCKA HAS GRANTED PERMISSION TO INSTALL THE SYSTEM COMPONENTS VIA THE "ALTERNATE METHOD OF CONSTRUCTION", I.E. IN THE WET, AND THE CONTRACTOR ELECTS TO PERFORM DEWATERING AS PART OF THE WORK, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS, SUBMIT AND OBTAIN ANY AND ALL REQUIRED DEWATERING/CONTAMINATION PERMIT APPROVALS (INCLUDING ANY ANCILLARY PERMITS THAT MAY BE REQUIRED, I.E. FROM R.E.R. WATER CONTROL OR POLLUTION CONTROL) PRIOR TO COMMENCING THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE OWNER/CITY.

44. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS. ALL INLETS AND DRAINS SHALL BE PROTECTED AND MUST BE MAINTAINED FREE OF DEBRIS AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE MUNICIPALITY OR ANY OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRUSION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.

45. PAVEMENT RESTORATION LIMITS ARE AS INDICATED IN THE DRAWINGS. PAVEMENT RESTORATION IS TO BE DONE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION AND MIAMI DADE COUNTY SPECIFICATIONS, UNLESS OTHERWISE NOTED.

46. ALL ASPHALT/CONCRETE SHALL BE SAW CUT TO ENSURE CLEAN EDGES.

47. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PERMIT (GCP) AND A NOTICE OF INTENT (NOI) TO USE SAID GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(4), A MULTI–SECTOR GENERIC PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY (MSGP) AND A NOTICE OF INTENT (NOI) TO USE SAID MULTI–SECTOR GENERIC PERMIT AS PROVIDED IN SUBSECTION 62–621.300(5), F.A.C. PURSUANT TO THE STATE'S FEDERALLY APPROVED NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER REGULATORY PROGRAM (NPDES). THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE RELATED PROFESSIONAL SERVICES, PREPARE APPLICATION DOCUMENTS AND OBTAIN ALL REQUIRED APPROVALS PRIOR TO COMMENCEMENT OF THE WORK AND AT NO ADDITIONAL CONTRACT TIME OR COST TO THE DEPARTMENT.

48. ONLY MATERIALS AND EQUIPMENTS THAT ARE REQUIRED TO BE USED UNDER THIS CONTRACT WILL BE ALLOWED ON THE PROJECT PREMISES.

49. PERMANENT SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED AT EXPOSED AREAS WITHIN 48 HOURS OF PROJECT COMPLETION TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGE INTO ADJACENT WATER BODIES OR DRAINAGE SYSTEMS. ALL PROPOSED TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED AND INSPECTED PRIOR TO COMMENCING CONSTRUCTION.

50. THE CONTRACTOR SHALL INCLUDE ALL MEANS & METHODS NECESSARY TO FACILITATE THE CONSTRUCTION OF COMPLETE WATER, STORMWATER, SEWER AND ROADWAY IMPROVEMENTS. THESE INCLUDE COMPLETE INFRASTRUCTURE INSTALLATION SUCH AS SHEET PILINGS, TRENCH BOXES, STEEL PLATES AND CONCRETE BARRIER WALLS AS NECESSARY TO PROTECT THE INTEGRITY OF THE WORK SITE, ITS WORKERS, AND THE PUBLIC.

51. IF SHEET PILINGS ARE REQUIRED FOR EXCAVATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED ENGINEER.

52. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL DURING CONSTRUCTION AND FOR ANY NECESSARY TEMPORARY TRAFFIC DIVERSIONS DURING CONSTRUCTION.

53. WORK PERFORMED UNDER THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL REQUIRED CLOSEOUT DOCUMENTATION HAVE BEEN SUBMITTED AS REQUIRED BY THE CONTRACT DOCUMENTS AND CITY OF OPA–LOCKA. AS PART OF CLOSEOUT, AS–BUILT DRAWINGS SHALL BE PROVIDED.

54. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED SURVEYOR TO COMPLETE AS–BUILT DRAWINGS FOR THE PROJECT.

55. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR THE FOLLOWING: STORM DRAINAGE PIPE MATERIALS, FITTINGS, MANHOLES, CATCH BASINS, AND OTHER REQUIRED ACCESSORIES FOR APPROVAL.

56. WHEN POWER POLES ARE ADJACENT TO ANY PROPOSED UTILITY, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION. THE SHORING AND SUPPORT METHODS SHALL BE APPROVED BY THE UTILITY COMPANY'S ENGINEERING DEPARTMENT. THE COST OF SHORING WILL BE INCLUDED IN THE OVERALL PROJECT COST.

57. PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONGSIDE OF AND OVER ALL UTILITIES. THE CITY REQUIRES THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COST OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CITY. IF RESULTS OF TESTS TAKEN DURING THE PROGRESS OF THE WORK INDICATE COMPACTED MATERIALS DO NOT MEET SPECIFIED REQUIREMENTS, SUCH DEFECTIVE WORK WILL BE REMOVED, REPLACED, AND RE–TESTED AS DIRECTED BY THE ENGINEER AND AT THE CONTRACTOR'S SOLE EXPENSE.

58. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SOIL MANAGEMENT PLAN TO THE EOR BEFORE THE BEGINNING OF CONSTRUCTION.

59. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A HEALTH AND SAFETY PLAN TO THE EOR BEFORE THE BEGINNING OF CONSTRUCTION.

60. PLANS ARE SUBJECT TO REVISION PENDING THE OUTCOME OF ONGOING PERMITTING EFFORTS. ANY CHANGES REQUIRED BY PERMITTING APPROVALS OR AGENCIES WILL BE INCORPORATED INTO THE CONFORMED SET OF DRAWINGS AS NECESSARY.

DESIGN & CONTRUCTION STANDARD DETAILS

1. THE LIST BELOW SHALL NOT BE CONSIDERED AS NECESSARILY COMPLETE. NOR SHALL THE STANDARD DETAILS WHICH MAY BE INCLUDED ELSEWHERE HEREIN BE CONSIDERED AS FORMING A COMPLETE LISTING OF ALL STANDARD DETAILS WHICH MAY APPLY TO THIS PROJECT.
2. ALL STANDARD DETAILS ARE INCORPORATED IN THE LIST BELOW BY REFERENCE AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FDOT AND/OR MIAMI–DADE COUNTY DEPT. OF PUBLIC WORKS STANDARD DETAILS, WHICHEVER IS MORE STRINGENT.

FDOT FY 2023–24 STANDARD PLANS

FOR	SEE DETAIL	SHEET
MULTILANE ROADWAY, LANE CLOSURES	102–613	1 OF 5
TEMPORARY ROADWAY CLOSURE	102–625	1 OF 1
CURB & CURB AND GUTTER	300	1 OF 2
CONCRETE SIDEWALK	310	1 OF 2
CONCRETE PAVEMENT	350–001	ALL
GUARD RAIL	400	1, 2 OF 22
SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	425–001	1, 2, 8 OF 8
STRAIGHT CONCRETE ENDWALLS – SINGLE AND MULTIPLE PIPE	430–030	ALL
DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	522–002	4 OF 7

MIAMI DADE COUNTY STANDARD ENGINEERING DETAILS

STRAIGHT SAND–CEMENT RIP RAP HEADWALL	BC 3.4	ALL
SAND–CEMENT RIP RAP HEADWALL	BC 3.5	ALL
POTABLE WATER MAIN, WASTEWATER & STORM SEWER CONFLICT (WASD)	GS 1.5	1 OF 2
PRECAST CATCH BASIN (D–3)	SD 2.2	ALL
MANATEE GRATE	SD 5.1	ALL

LEGEND

W.M.	Exist. Water Main
S.S.	Exist. Storm Sewer
San.	Exist. Sanitary Sewer
F.M.	Exist. Force Main
G.	Exist. Gas
℄	Center line
B	Base line
℄ & B	Center line and Base line
M	Monument line
S	Section line
R/W	Right of way line
P	Property line
TEL	Exist. Telephone
U/G	Exist. Electric underground
CATV	Exist. Cable underground
	Exist. Chainlink fence
REQ'D.	Required
O/S	Offset
D.I.	Ductile Iron
REST. J.	Restrained Joint
	Exist. Guy Wire Anchor
	Exist. Street Light Pole
	Exist. Utility Conc. Pole
	Exist. Utility Pole
	Exist. Flood Light
	Exist. Traffic Light Pole
	Exist. Pedestrian Crossing Light
E	Exist. Electric Box
LT	Exist. Street Light Box
T	Exist. Telephone Box
TR	Exist. Traffic Signal Box
TV	Exist. Cable TV Box
	Exist. C.B.
E	Exist. Electric MH
SS	Exist. Storm MH
S	Exist. Sanitary MH
T	Exist. Telephone MH
W	Exist. Water MH
	Exist. Well
	Exist. Sprinkler
	Exist. Fire Hydrant
	Exist. Valve
	Core Boring
	Exist. Sign
W	Exist. Single Water Meter
W	Prop. Single Water Meter
WW	Prop. Dual Water Meter
	Limits of milling and resurfacing pavement restoration
	Limits of brick restoration
	Exist. Tree
	Exist. Palm
	Exist. Hedge

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DATE: 09/03/2020

CITY OF OPA-LOCKA FLORIDA EST. 1915

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

NOTES & LEGEND

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD CHECKED: LJ
DRAWN: RE FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753–2605

PROJECT No: 19–00098
PCTS No:
FILE NAME: OPA–LOCKA–TASK #4 – COVER – G–01 – ROAD AND DRAINAGE – BID SET.DWG
DATE: 9/20/24 SCALE: AS SHOWN

SHEET G–2
DRAWING No. 2 OF 43



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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

KEY SHEET

DRAWING HISTORY

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90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

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3	DTPW COMMENTS	09/16/24	AD

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PROJECT No: 19-00098

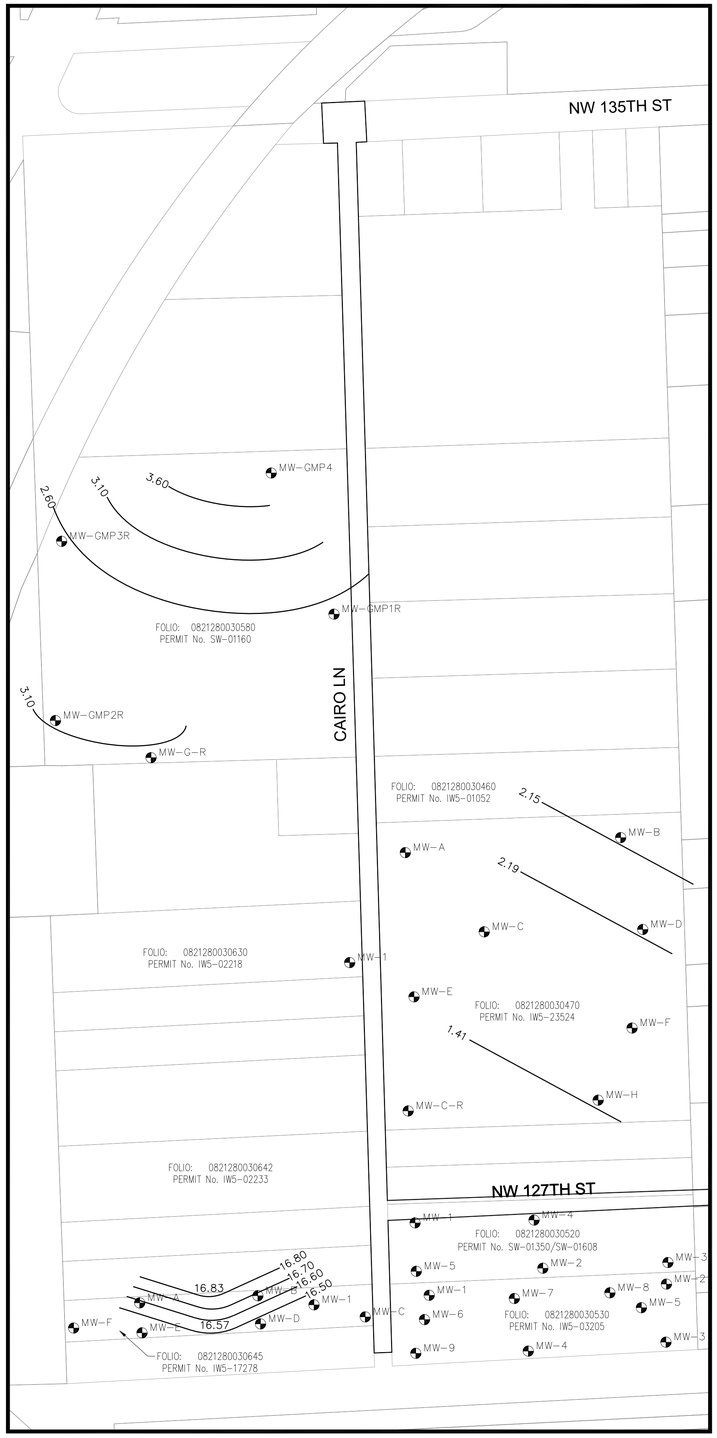
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – COVER – G-01 – ROAD AND DRAINAGE – BID SET.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET G-3

DRAWING No. 3 OF 43



N

FOLIO	PERMIT No.	MONITORING WELL	CONTAMINANTS ABOVE GCTL
0821280030580	SW-01160	MW-GMP1R	AMMONIA
		MW-GMP2R	AMMONIA
		MW-GMP3/3R	IRON
		MW-GMP4	AMMONIA, TRPH, BENZENE, ISOPROPYLBENZENE, IRON
0821280030630	IW5-02218	MW-1	VINYL CHLORIDE, LEAD
0821280030645	IW5-17278 / SW-01350	MW-A	BENZENE
		MW-B	LEAD
		MW-E	BENZO(a)PYRENE, BENZO (a) ANTHRACENE, BENZO(b)FLOURANTHENE, BENZO(K)FLOURANTHENE, INDENO(1,2,3-cd)PYRENE
0821280030530	IW5-03205 / SW-01350	MW-1	IRON, AMMONIA
		MW-2	IRON, AMMONIA
		MW-3	IRON, AMMONIA
		MW-4	IRON, AMMONIA, CHLOROBENZENE
		MW-5	IRON, AMMONIA, BENZO (a) ANTHRACENE, FLOURANTHENE, INDENO(1,2,3)PYRENE
		MW-6	IRON, AMMONIA, BENZO (a) ANTHRACENE, FLOURANTHENE
		MW-7	IRON, AMMONIA, BENZO(a)PYRENE, BENZO (a) ANTHRACENE, FLOURANTHENE, INDENO(1,2,3)PYRENE, DIBENZ(a,h)ANTHRACENE
0821280030520	SW-01608	MW-2	IRON
		MW-3	IRON
		MW-4	IRON, ALUMINUM, LEAD
		MW-5	IRON
0821280030470	IW5-23524 / SW-01350	MW-B	PFOS
		MW-D	IRON, MANGANESE, BENZO(a)ANTHRACENE, AMMONIA, PFOS
		MW-E	IRON, MANGANESE, TDS, AMMONIA, PFOS
		MW-H	ALUMINUM, IRON, LEAD, MANGANESE, TDS, AMMONIA, PFOS
0821280030460	IW5-1052	MW-1	BENZENE, ETHYLBENZENE, ACRYLONITRILE, CUMENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE
		MW-2R	BENZENE, ACRYLONITRILE, CUMENE
		MW-3	MTBE, ACRYLONITRILE, CUMENE
		MW-4	BENZENE, ETHYLBENZENE, ACRYLONITRILE, CUMENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE, TOTAL XYLENES
		MW-5	BENZENE, CUMENE, TOTAL XYLENES, NAPHTHALENE
		MW-6	ETHYLBENZENE, ACRYLONITRILE, CUMENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE, TOTAL XYLENES
		MW-8	BENZENE
		MW-9	BENZENE, ETHYLBENZENE, CUMENE, 1,2,4-TRIETHYLBENZENE, 1,3,5-TRIMETHYLBENZENE, NAPHTHALENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE
		MW-10	BENZENE, CUMENE, 2-METHYLNAPHTALENE
		MW-11	BENZENE, ETHYLBENZENE, CUMENE, 1,2,4-TRIETHYLBENZENE, 1,3,5-TRIMETHYLBENZENE, NAPHTHALENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE, TOTAL XYLENES, TPHS
		MW-12	BENZENE, CUMENE, 1,2,4-TRIETHYLBENZENE, 2-METHYLNAPHTALENE, 1-METHYLNAPHTHALENE, TOTAL XYLENES

LEGEND

GROUNDWATER FLOW DIRECTION

LIMITS BOUNDARY

MONITORING WELLS

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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
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Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

POLLUTION PLAN CAIRO LANE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

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(305) 753-2605

PROJECT No: 19-00098

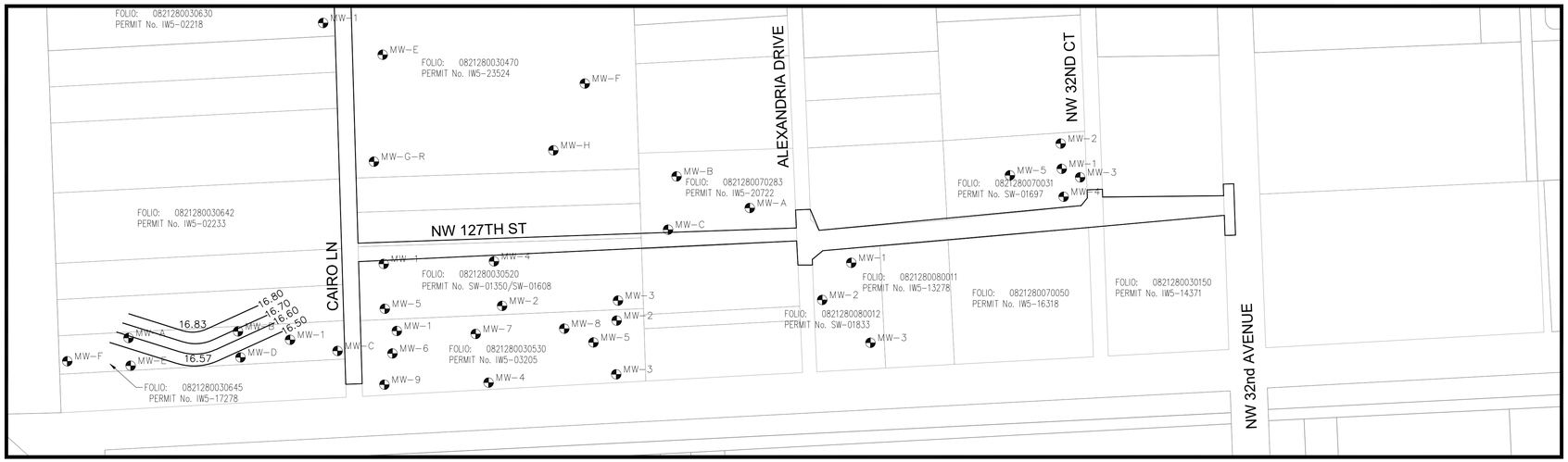
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – COVER – G-01 – ROAD AND DRAINAGE – BID SET.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET
G-4

DRAWING No.
4 OF 43



N

FOLIO	PERMIT No.	MONITORING WELL	CONTAMINANTS ABOVE GCTL
0821280080012	SW-01833	MW-4	LEAD
08-2128-007-0283	IW5-20722	MW-A	TRPH, LEAD
		MW-B	TRPH, LEAD, CHROMIUM, NICKEL, BENZENE
		MW-C	TRPH, LEAD
0821280070031	SW-01697	MW-1	BENZENE(a) ANTHRACENE, BENZO(b)FLOURANTHENE, DIBENZ(a,h)ANTHRACENE

LEGEND

- GROUNDWATER FLOW DIRECTION
- LIMITS BOUNDARY
- MONITORING WELLS

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

POLLUTION PLAN NW 127TH ST

DRAWING HISTORY

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3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
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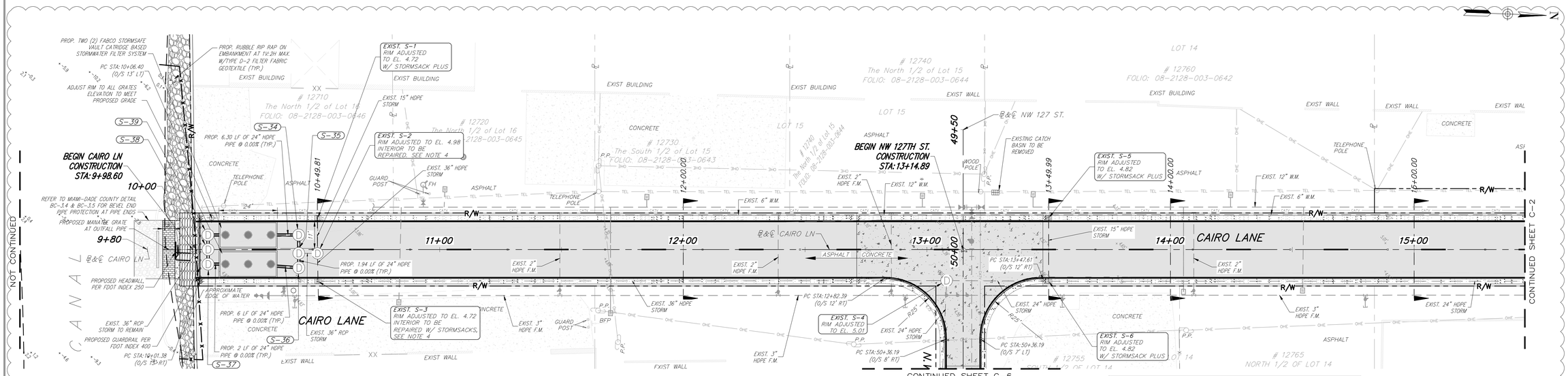
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(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – COVER – G-01 – ROAD AND DRAINAGE – BID SETTING
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET G-5

DRAWING No. 5 OF 43



STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-1	RIM=4.72 SUMP=-2.65		15" HDPE I.E. (E)-0.65
EXIST. S-2	RIM=4.98 SUMP=-2.75	15" HDPE I.E. (W)-0.65 36" HDPE I.E. (E)-0.75	36" RCP RCP I.E. (S)-0.40
EXIST. S-3	RIM=4.72 SUMP=-3.22	36" HDPE I.E. (N)-1.22	36" HDPE I.E. (W)-0.87
EXIST. S-4	RIM=5.01 SUMP=-3.22	24" HDPE I.E. (E)0.10 24" HDPE I.E. (N)-1.22	36" HDPE I.E. (S)-1.22
EXIST. S-5	RIM=4.82 SUMP=-2.26		15" HDPE I.E. (E)-0.26
EXIST. S-6	RIM=4.82 SUMP=-2.26	15" HDPE I.E. (W)-0.26 24" HDPE I.E. (N)-0.24	24" HDPE I.E. (S)-0.14

STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
S-34	RIM=5.40 SUMP=-2.40	24" HDPE I.E. (E)-0.40	24" HDPE I.E. (S)-0.40
S-35	RIM=5.49 SUMP=-2.40	36" RCP RCP I.E. (N)-0.40	24" HDPE I.E. (E)-0.40 24" HDPE I.E. (W)-0.40
S-36	RIM=5.37 SUMP=-2.40	24" HDPE I.E. (W)-0.40	24" HDPE I.E. (S)-0.40
S-37	RIM=7.28 SUMP=-2.40	24" HDPE I.E. (N)-0.40	24" HDPE I.E. (W)-0.40
S-38	RIM=7.40 SUMP=-2.40	24" HDPE I.E. (E)-0.40 24" HDPE I.E. (W)-0.40	36" RCP I.E. (S)-0.40
S-39	RIM=7.29 SUMP=-2.40		24" HDPE I.E. (N)-0.40 24" HDPE I.E. (E)-0.40

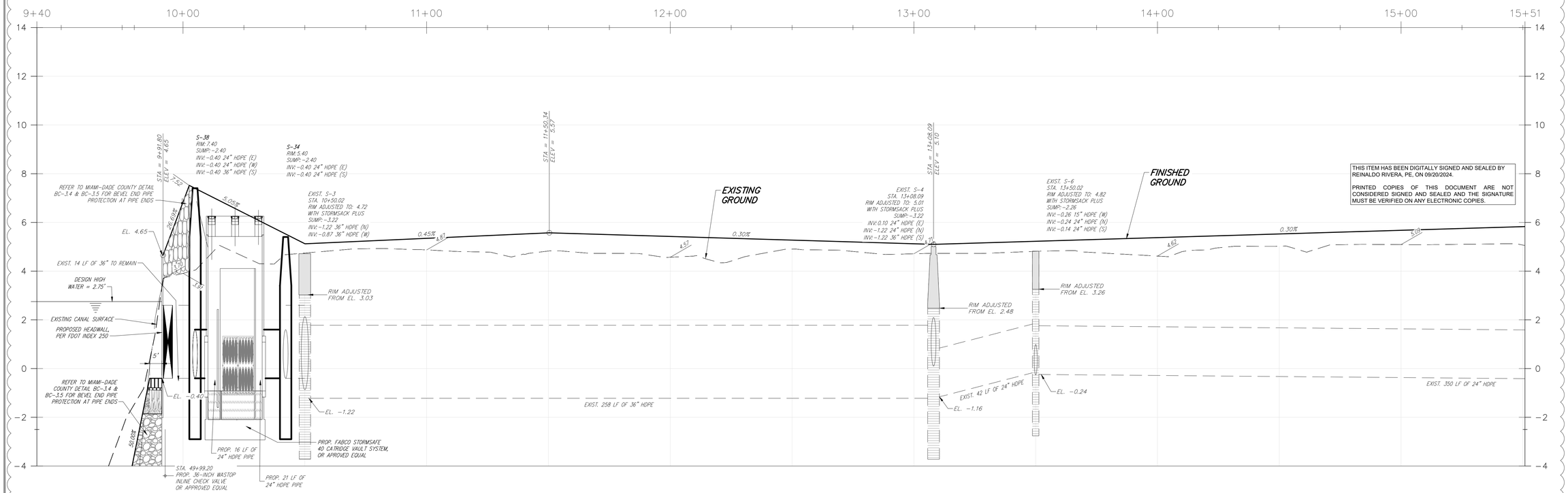
NOTE:

1. DRAWINGS BASED UPON AVAILABLE RECORDS THAT PROVIDE LIMITED DATA REGARDING UNDERGROUND UTILITIES IN THE PROJECT AREA. THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND MATERIALS OF ALL EXISTING UTILITIES AND DRAINAGE AT PROPOSED TIE-INS, CROSSING, AND REMOVALS, TO ALLOW FOR PROPER ALIGNMENT AND CLEARANCES BETWEEN EXISTING AND PROPOSED IMPROVEMENTS.
2. NEW INLET GRATES TO BE PROVIDED TO ALL EXISTING DRAINAGE STRUCTURES ON CAIRO LANE AND NW 127TH STREET.
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5. INFORMATION OF CONTAMINATION IN THE AREA, PLEASE REFER TO SHEETS C-22 AND C-23.
6. ALL INLET STRUCTURES TO HAVE STORMSACK PLUS BY FABCO OR APPROVED EQUAL.

LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
- F.M. — Prop. Force Main
- W.M. — Exist. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Prop. Catch Basin
- Prop. Storm Pipe

HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

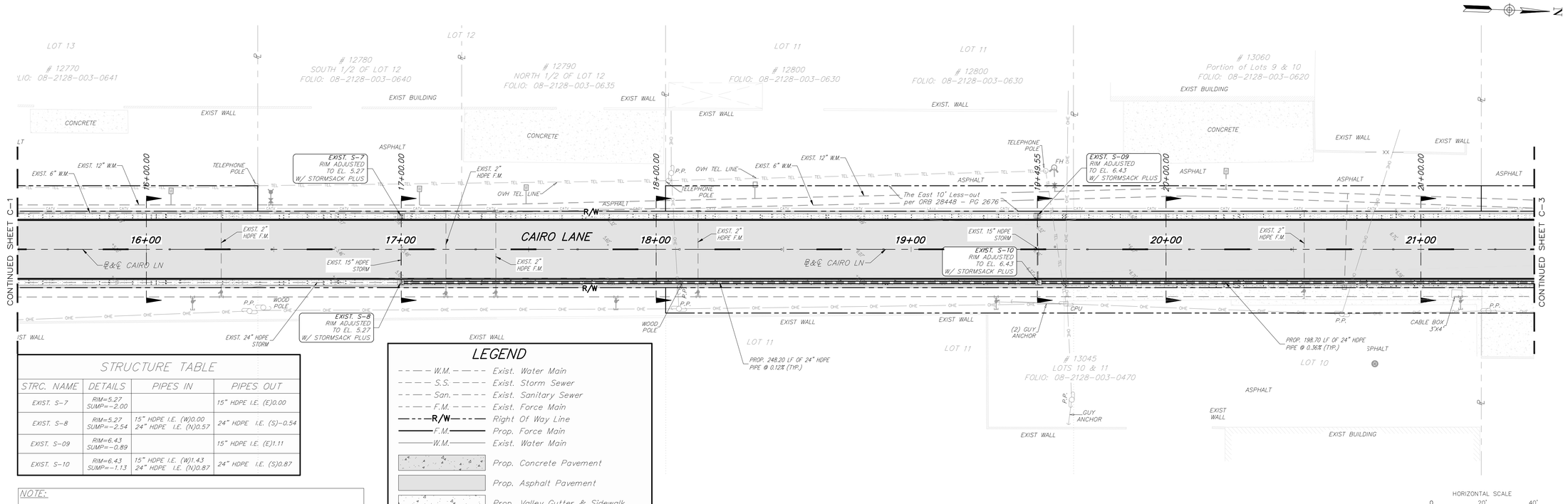
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-1

DRAWING No. 6 OF 43



STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-7	RIM=5.27 SUMP=-2.00		15" HDPE I.E. (E)0.00
EXIST. S-8	RIM=5.27 SUMP=-2.54	15" HDPE I.E. (W)0.00 24" HDPE I.E. (N)0.57	24" HDPE I.E. (S)-0.54
EXIST. S-09	RIM=6.43 SUMP=-0.89		15" HDPE I.E. (E)1.11
EXIST. S-10	RIM=6.43 SUMP=-1.13	15" HDPE I.E. (W)1.43 24" HDPE I.E. (N)0.87	24" HDPE I.E. (S)0.87

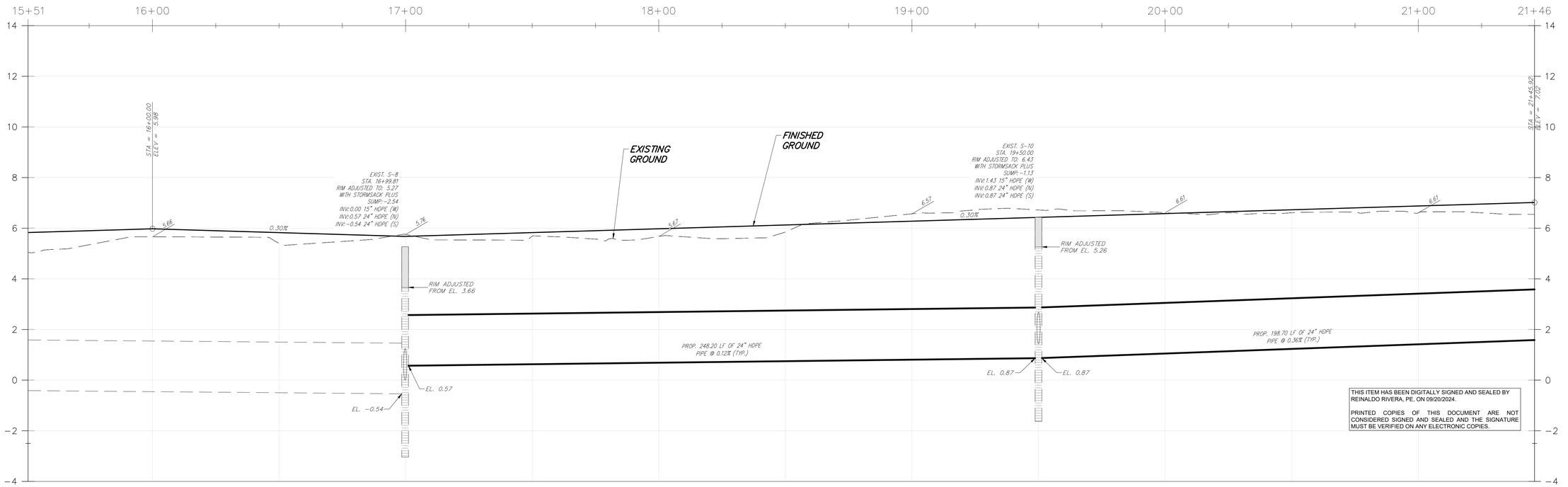
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- Exist. Catch Basin
- Prop. Catch Basin
- Prop. Storm Pipe

HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

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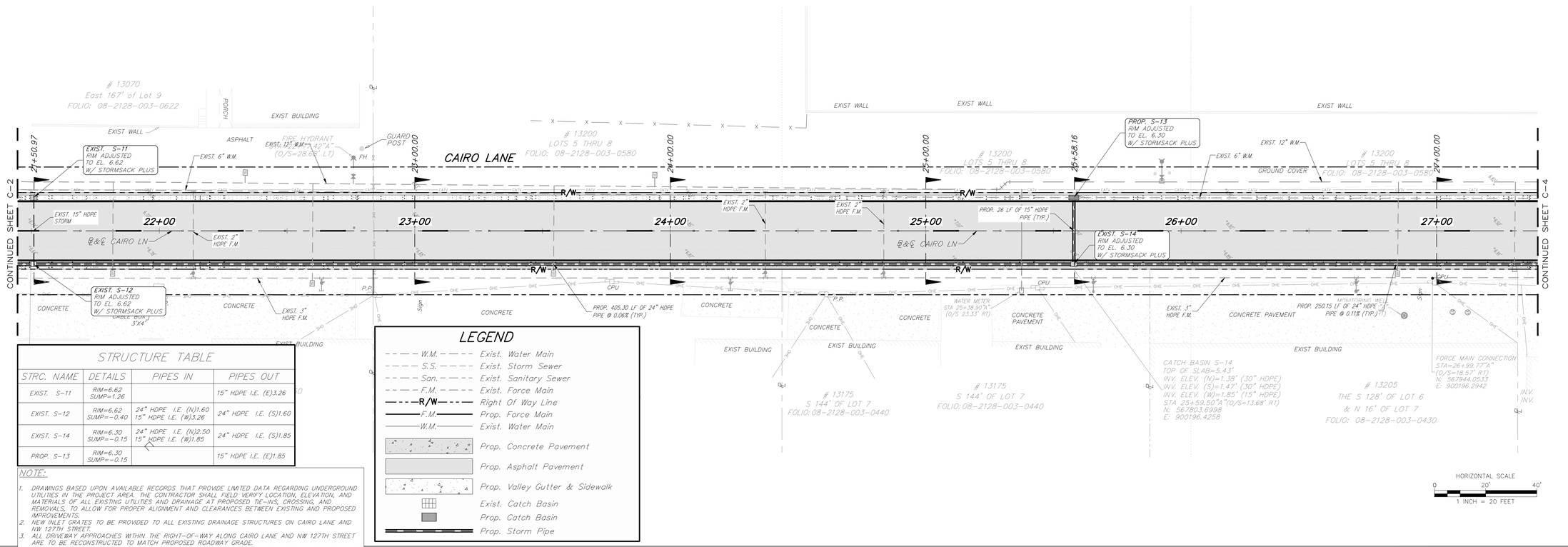
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(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET
C-2

DRAWING No.
7 OF 43



STRUCTURE TABLE

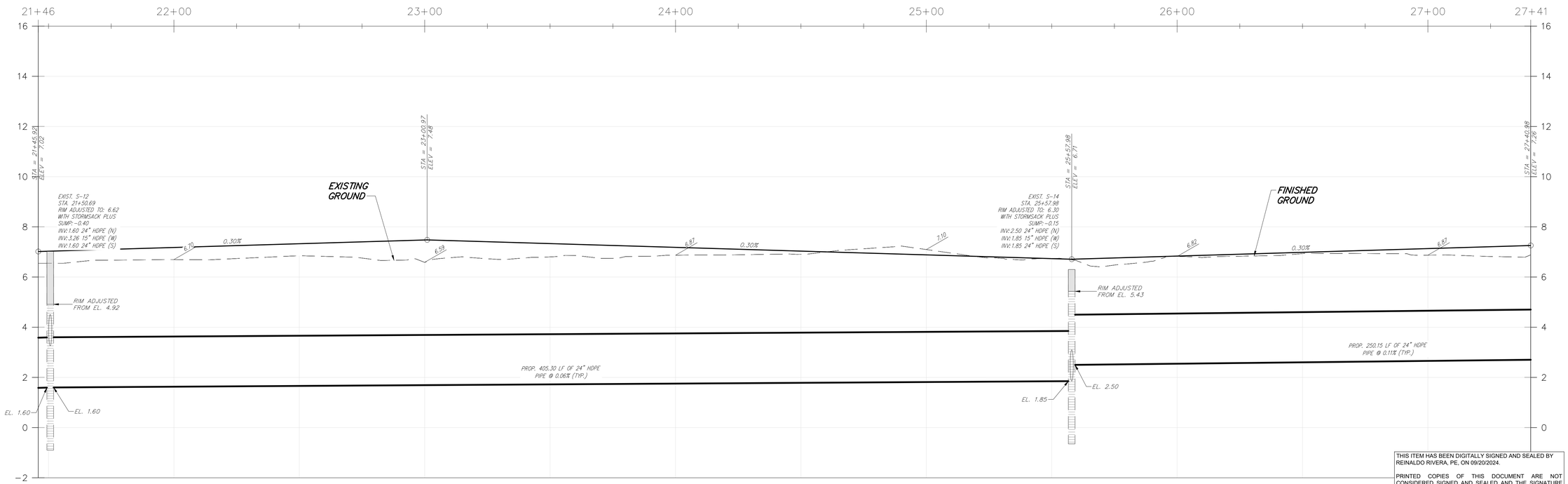
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-11	RIM=6.62 SUMP=-1.26		15" HDPE I.E. (E)3.26
EXIST. S-12	RIM=6.62 SUMP=-0.40	24" HDPE I.E. (N)1.60 15" HDPE I.E. (W)3.26	24" HDPE I.E. (S)1.60
EXIST. S-14	RIM=6.30 SUMP=-0.15	24" HDPE I.E. (N)2.50 15" HDPE I.E. (W)1.85	24" HDPE I.E. (S)1.85
PROP. S-13	RIM=6.30 SUMP=-0.15		15" HDPE I.E. (E)1.85

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ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

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PROJECT No: 19-00098

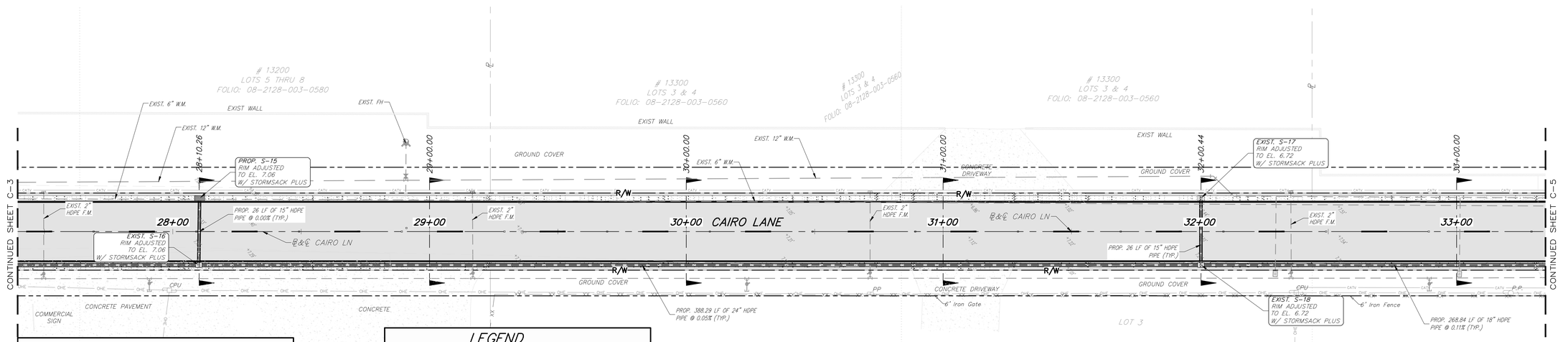
PCTS No:

FILE NAME: OPA-LOCKA- TASK #4 – ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-3

DRAWING No. 8 OF 43



STRUCTURE TABLE

STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-16	RIM=7.06 SUMP=0.78	24" HDPE I.E. (N)3.00 15" HDPE I.E. (W)3.00	24" HDPE I.E. (S)2.78
EXIST. S-17	RIM=6.72 SUMP=1.20		15" HDPE I.E. (E)3.20
EXIST. S-18	RIM=6.72 SUMP=1.20	18" HDPE I.E. (N)3.20 15" HDPE I.E. (W)3.20	24" HDPE I.E. (S)3.20
PROP. S-15	RIM=7.06 SUMP=1.00		15" HDPE I.E. (E)3.00

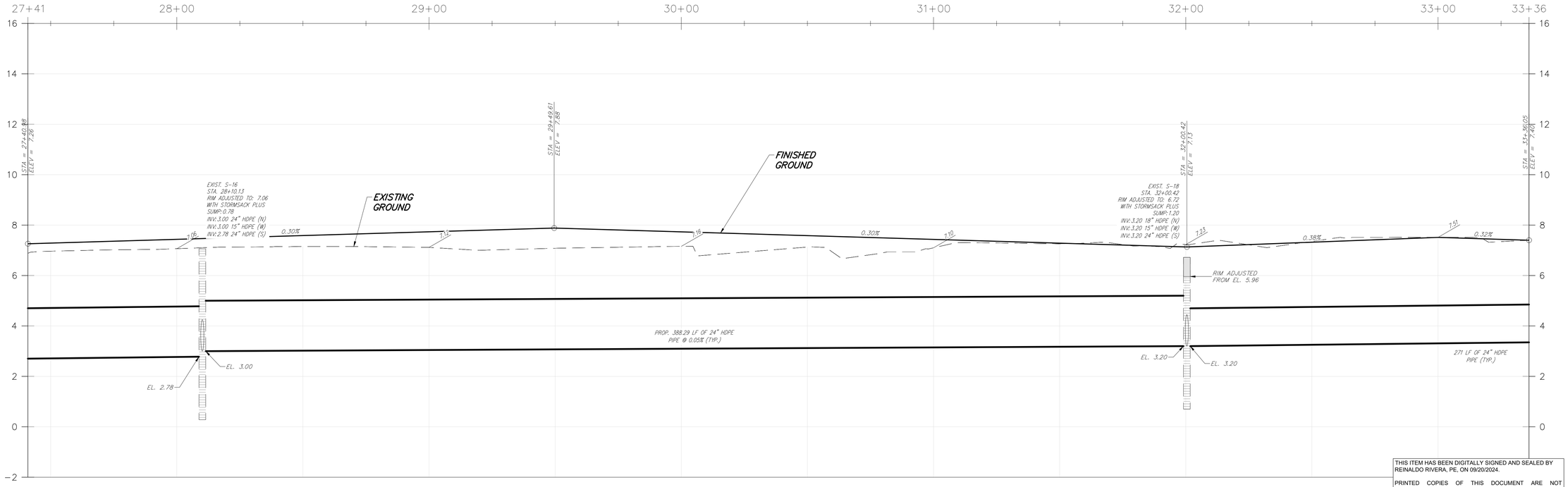
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NOTE:

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HORIZONTAL SCALE
0 20' 40'
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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
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PERMIT SET	X	05/05/23	A.D
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REVISIONS

No.	DESCRIPTION	DATE	BY
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APPROVALS

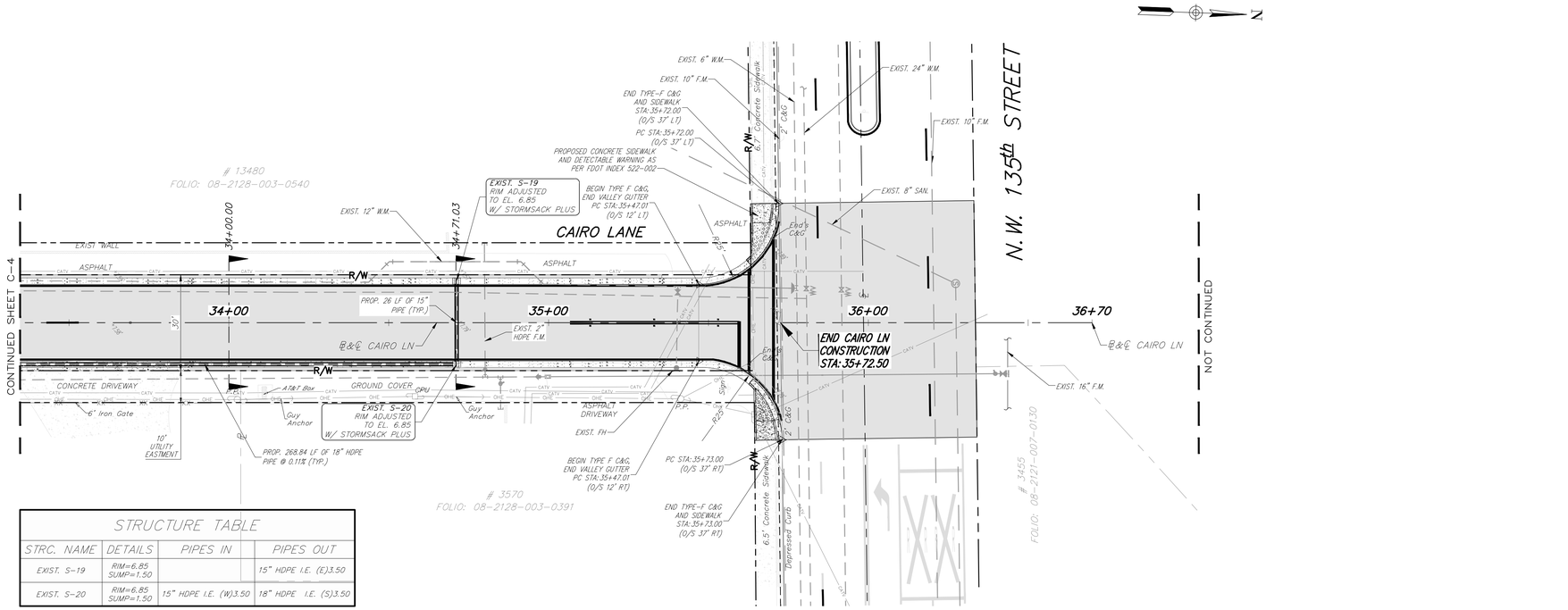
CHIEF ENGINEER:
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PROJECT MGR.:
DESIGNED: AD CHECKED: LJ
DRAWN: RE FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

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CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG
DATE: 9/20/24 SCALE: AS SHOWN

SHEET C-4
DRAWING No. 9 OF 43

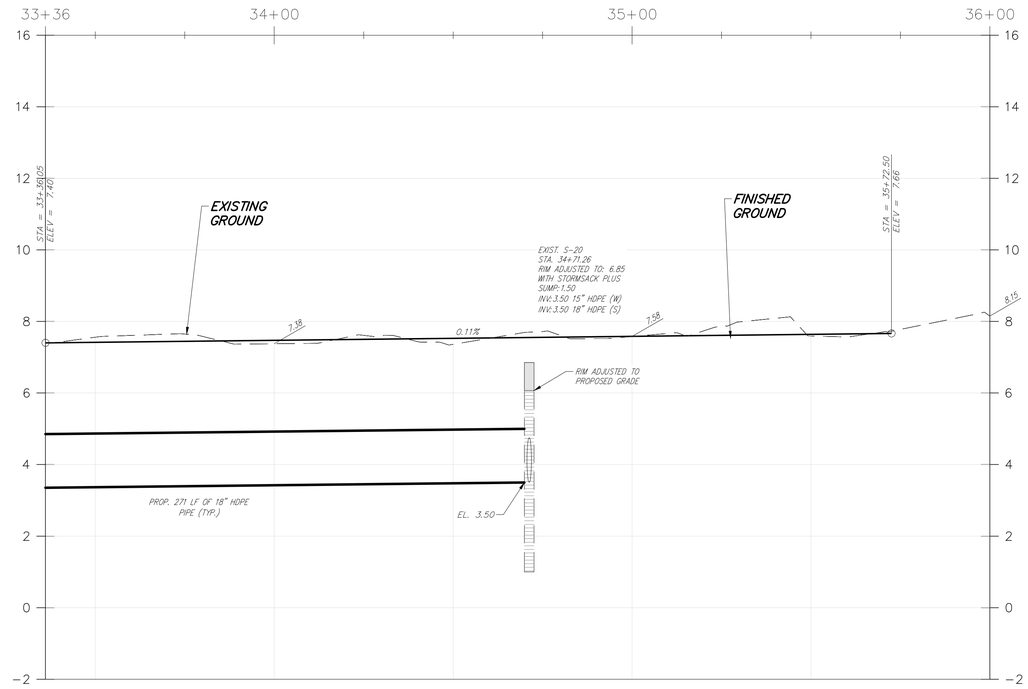


STRUCTURE TABLE

STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-19	RIM=6.85 SUMP=1.50		15" HDPE I.E. (E)3.50
EXIST. S-20	RIM=6.85 SUMP=1.50	15" HDPE I.E. (W)3.50	18" HDPE I.E. (S)3.50

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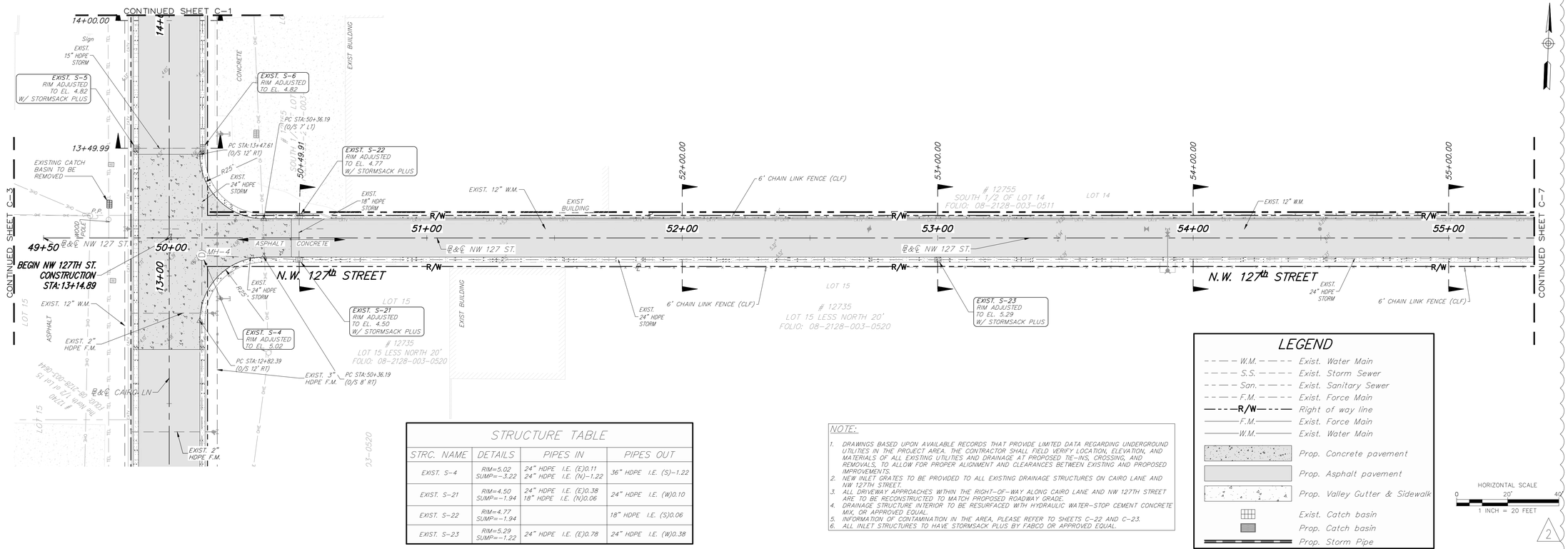
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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET C-5

DRAWING No. 10 OF 43



STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-4	RIM=5.02 SUMP=-3.22	24" HDPE I.E. (E)0.11 24" HDPE I.E. (N)-1.22	36" HDPE I.E. (S)-1.22
EXIST. S-21	RIM=4.50 SUMP=-1.94	24" HDPE I.E. (E)0.38 18" HDPE I.E. (N)0.06	24" HDPE I.E. (W)0.10
EXIST. S-22	RIM=4.77 SUMP=-1.94		18" HDPE I.E. (S)0.06
EXIST. S-23	RIM=5.29 SUMP=-1.22	24" HDPE I.E. (E)0.78	24" HDPE I.E. (W)0.38

NOTE:

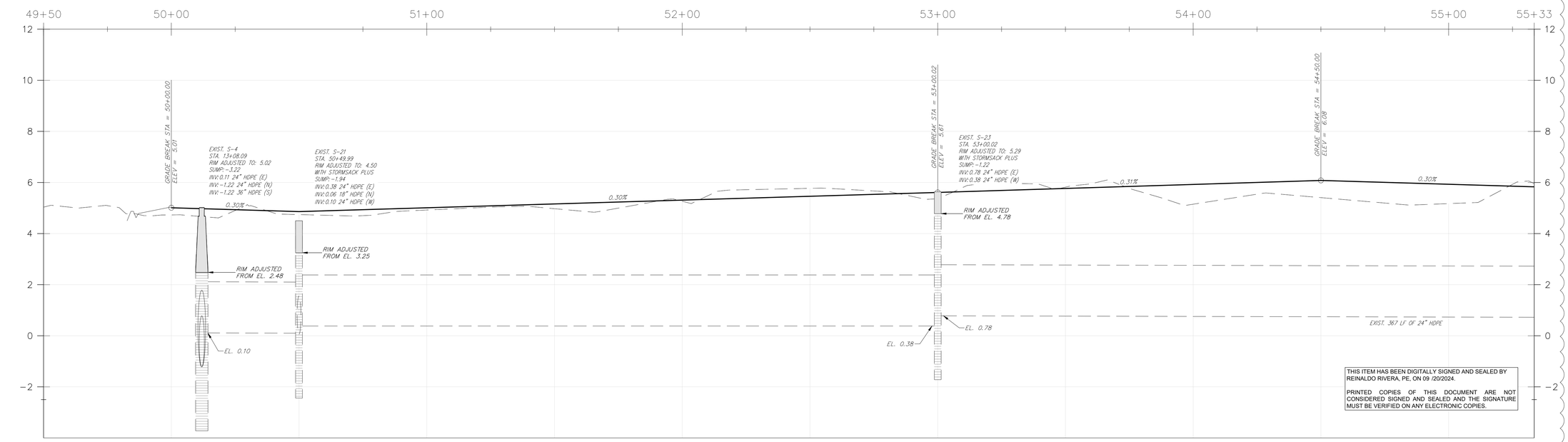
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1 INCH = 20 FEET

2



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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

PLAN AND PROFILE PROPOSED ROADWAY AND DRAINAGE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

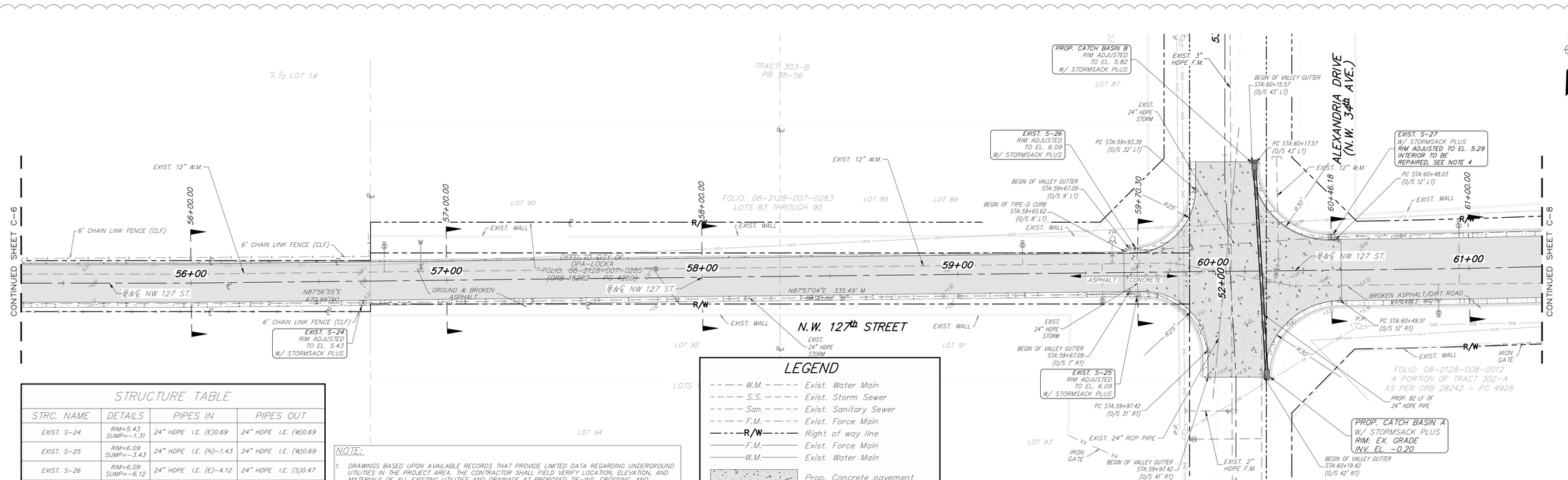
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY – 127.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-6

DRAWING No. 11 OF 43



LEGEND

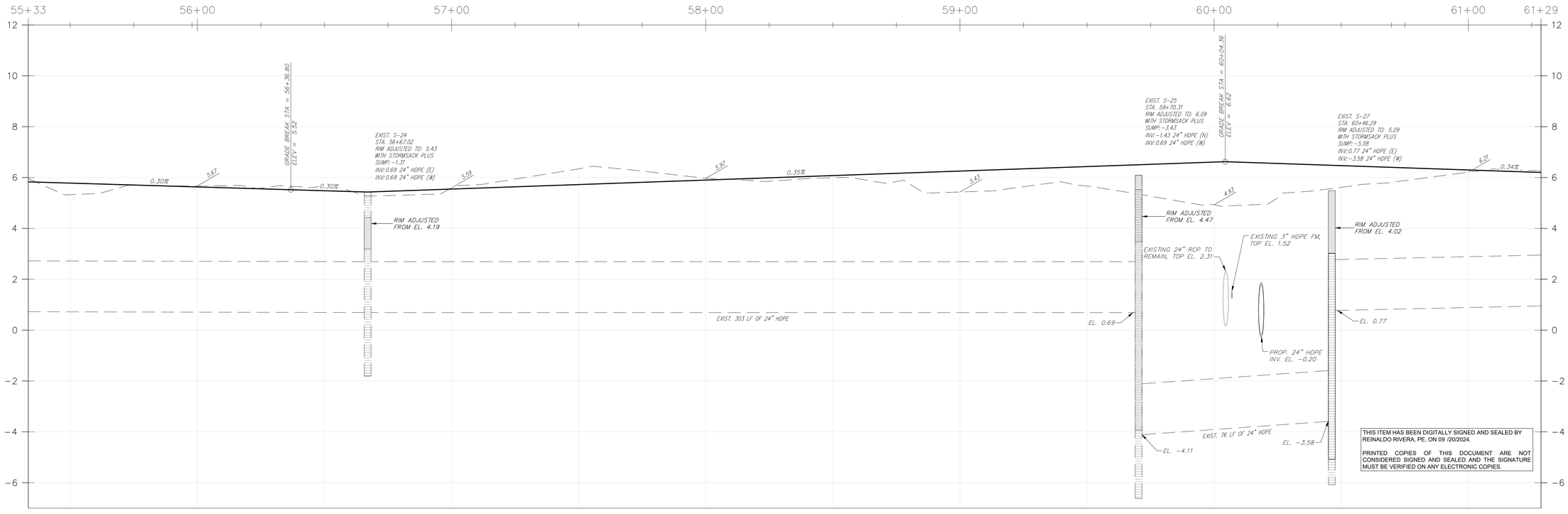
- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right of way line
- F.M. — Exist. Force Main
- W.M. — Exist. Water Main
- Prop. Concrete pavement
- Prop. Asphalt pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch basin
- Prop. Catch basin
- Prop. Storm Pipe

STRUCTURE TABLE

STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-24	RIM=5.43 SUMP=-1.31	24" HDPE I.E. (E)0.69	24" HDPE I.E. (W)0.69
EXIST. S-25	RIM=6.09 SUMP=-3.43	24" HDPE I.E. (N)-1.43	24" HDPE I.E. (W)0.69
EXIST. S-26	RIM=6.09 SUMP=-6.12	24" HDPE I.E. (E)-4.12	24" HDPE I.E. (S)0.47
EXIST. S-27	RIM=5.29 SUMP=-5.58	24" HDPE I.E. (E)0.77	24" HDPE I.E. (W)-3.58
PROP. CATCH BASIN A	RIM=5.83 SUMP=-2.20	24" HDPE I.E. (N)-0.20	
PROP. CATCH BASIN B	RIM=5.82 SUMP=-2.20		24" HDPE I.E. (S)-0.20

NOTE:

1. DRAWINGS BASED UPON AVAILABLE RECORDS THAT PROVIDE LIMITED DATA REGARDING UNDERGROUND UTILITIES IN THE PROJECT AREA. THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND MATERIALS OF ALL EXISTING UTILITIES AND DRAINAGE AT PROPOSED TIE-INS, CROSSING, AND REMOVALS, TO ALLOW FOR PROPER ALIGNMENT AND CLEARANCES BETWEEN EXISTING AND PROPOSED IMPROVEMENTS.
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3. ALL DRIVEWAY APPROACHES WITHIN THE RIGHT-OF-WAY ALONG CAIRO LANE AND NW 127TH STREET ARE TO BE RECONSTRUCTED TO MATCH PROPOSED ROADWAY GRADE.
4. DRAINAGE STRUCTURE INTERIOR TO BE RESURFACED WITH HYDRAULIC WATER-STOP CEMENT CONCRETE MIX, OR APPROVED EQUAL.
5. INFORMATION OF CONTAMINATION IN THE AREA, PLEASE REFER TO SHEETS C-22 AND C-23.
6. ALL INLET STRUCTURES TO HAVE STORMSACK PLUS BY FABCO OR APPROVED EQUAL.



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM
PLAN AND PROFILE PROPOSED ROADWAY AND DRAINAGE

DRAWING HISTORY

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30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

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(305) 753-2605

PROJECT No: 19-00098

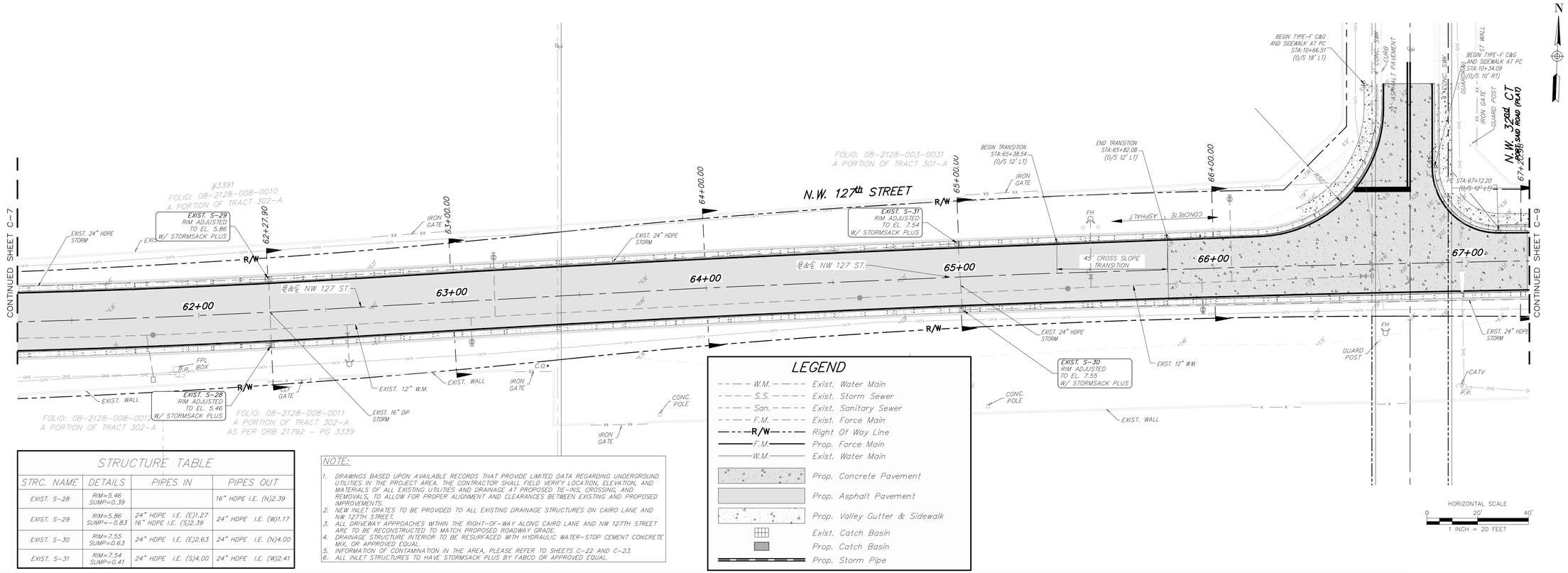
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY – 127.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-7

DRAWING No. 12 OF 43



STRUCTURE TABLE

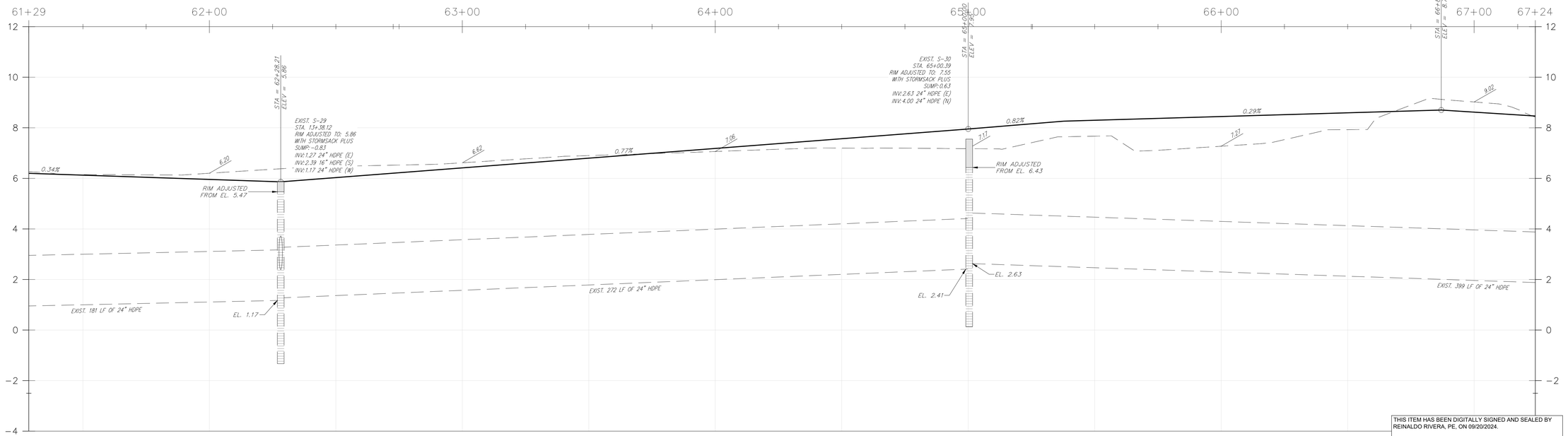
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-28	RIM=5.46 SUMP=0.39		16" HDPE I.E. (N)2.39
EXIST. S-29	RIM=5.86 SUMP=-0.83	24" HDPE I.E. (E)1.27 16" HDPE I.E. (S)2.39	24" HDPE I.E. (W)1.17
EXIST. S-30	RIM=7.55 SUMP=0.63	24" HDPE I.E. (E)2.63	24" HDPE I.E. (N)4.00
EXIST. S-31	RIM=7.54 SUMP=0.41	24" HDPE I.E. (S)4.00	24" HDPE I.E. (W)2.41

NOTE:

1. DRAWINGS BASED UPON AVAILABLE RECORDS THAT PROVIDE LIMITED DATA REGARDING UNDERGROUND UTILITIES IN THE PROJECT AREA. THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND MATERIALS OF ALL EXISTING UTILITIES AND DRAINAGE AT PROPOSED TIE-INS, CROSSING, AND REMOVALS, TO ALLOW FOR PROPER ALIGNMENT AND CLEARANCES BETWEEN EXISTING AND PROPOSED IMPROVEMENTS.
2. NEW INLET GRATES TO BE PROVIDED TO ALL EXISTING DRAINAGE STRUCTURES ON CAIRO LANE AND NW 127TH STREET.
3. ALL DRIVEWAY APPROACHES WITHIN THE RIGHT-OF-WAY ALONG CAIRO LANE AND NW 127TH STREET ARE TO BE RECONSTRUCTED TO MATCH PROPOSED ROADWAY GRADE.
4. DRAINAGE STRUCTURE INTERIOR TO BE RESURFACED WITH HYDRAULIC WATER-STOP CEMENT CONCRETE MIX, OR APPROVED EQUAL.
5. INFORMATION OF CONTAMINATION IN THE AREA, PLEASE REFER TO SHEETS C-22 AND C-23.
6. ALL INLET STRUCTURES TO HAVE STORMSACK PLUS BY FABCO OR APPROVED EQUAL.

LEGEND

- W.M. — Exist. Water Main
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- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
- F.M. — Prop. Force Main
- W.M. — Exist. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Prop. Catch Basin
- Prop. Storm Pipe



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ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
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2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

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(305) 753-2605

PROJECT No: 19-00098

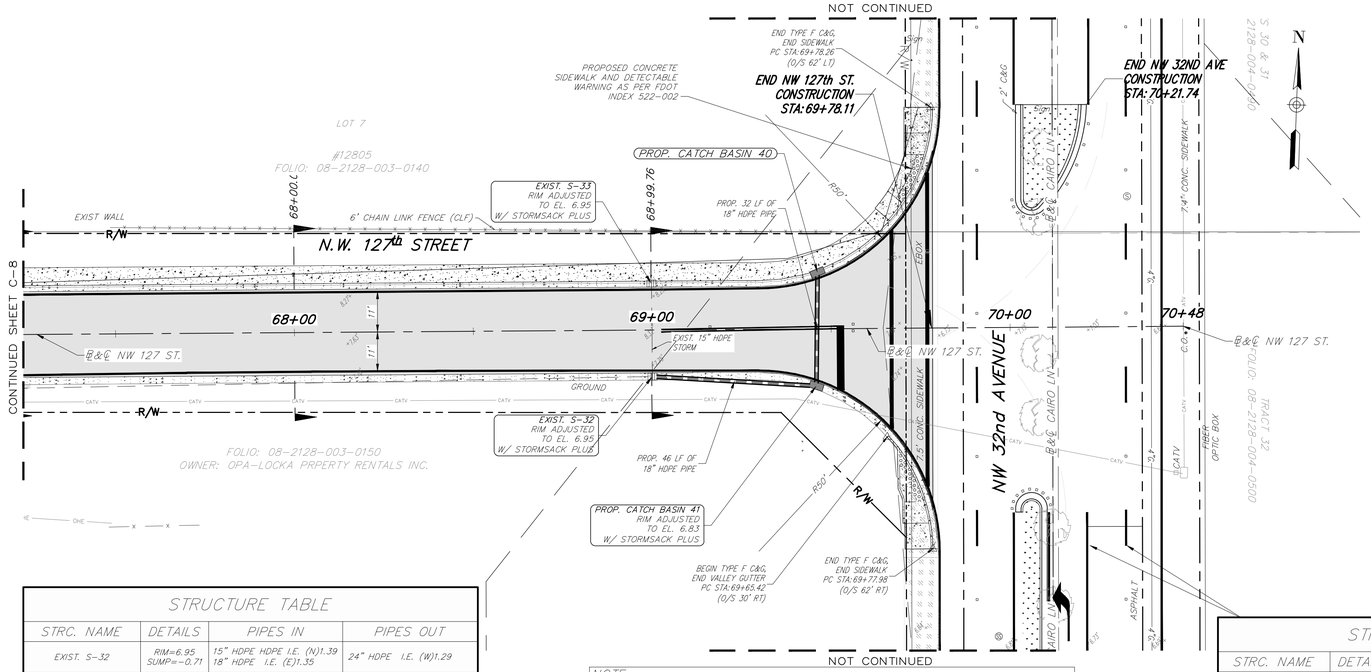
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-8

DRAWING No. 13 OF 43

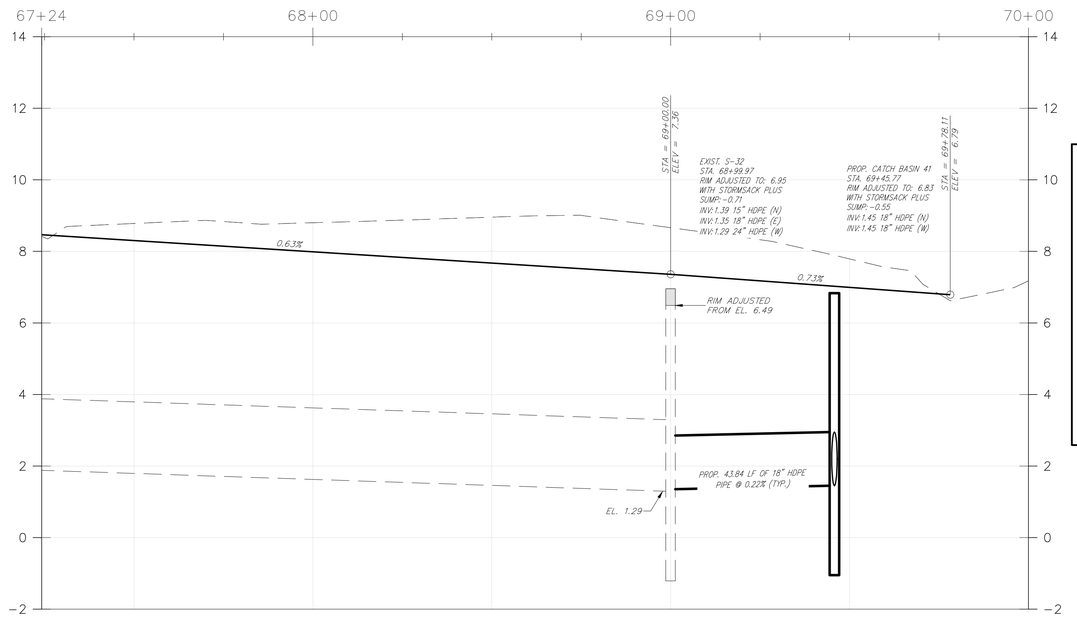


STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
EXIST. S-32	RIM=6.95 SUMP=-0.71	15" HDPE HDPE I.E. (N)1.39 18" HDPE I.E. (E)1.35	24" HDPE I.E. (W)1.29
EXIST. S-33	RIM=6.95 SUMP=0.23		15" HDPE HDPE I.E. (S)2.23
PROP. CATCH BASIN 40	RIM=6.83 SUMP=-0.55		18" HDPE I.E. (S)1.45
PROP. CATCH BASIN 41	RIM=6.83 SUMP=-0.55	18" HDPE I.E. (N)1.45	18" HDPE I.E. (W)1.45

STRUCTURE TABLE			
STRC. NAME	DETAILS	PIPES IN	PIPES OUT
PROP. CATCH BASIN A	RIM=5.34 SUMP=-2.20	24" HDPE I.E. (N)-0.20	
PROP. CATCH BASIN B	RIM=8.46 SUMP=-2.20		24" HDPE I.E. (S)-0.20

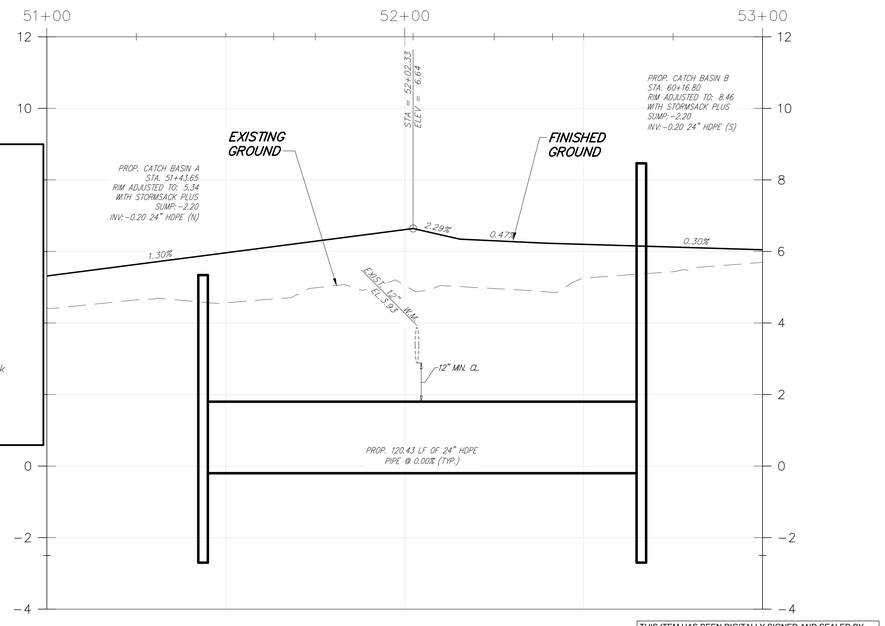
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5. INFORMATION OF CONTAMINATION IN THE AREA, PLEASE REFER TO SHEETS C-22 AND C-23.
6. NW 127TH STREET BETWEEN CAIRO LANE AND NW 32ND AVE TO BE A PUBLIC ROADWAY.
7. PRIVATE OWNERS WERE NOTIFIED ABOUT THE PROPERTY ENCROACHMENT AND APPROVED CONSTRUCTION OF SIDEWALK IMPROVEMENTS.



LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
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- W.M. — Exist. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
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- Prop. Catch Basin
- Prop. Storm Pipe



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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY & DRAINAGE PLAN & PROFILE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
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REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

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DRAWN: RE | FINAL CHECK: RR

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(305) 753-2605

PROJECT No: 19-00098

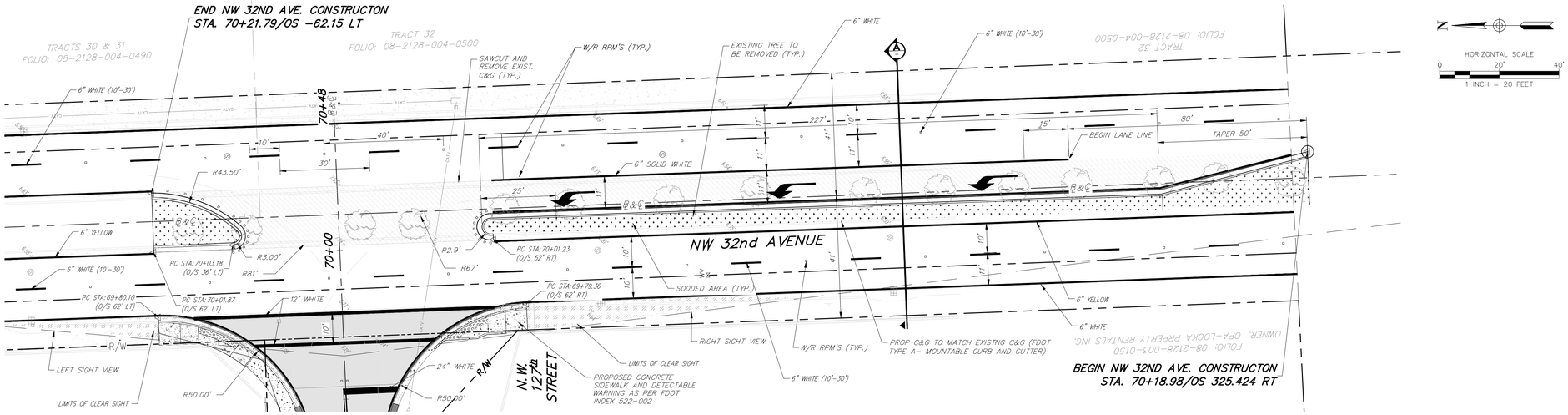
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-9

DRAWING No. 14 OF 43

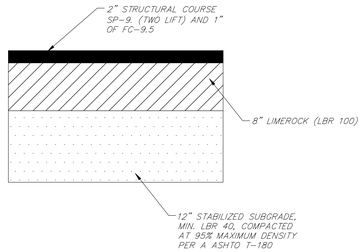


NOTE:

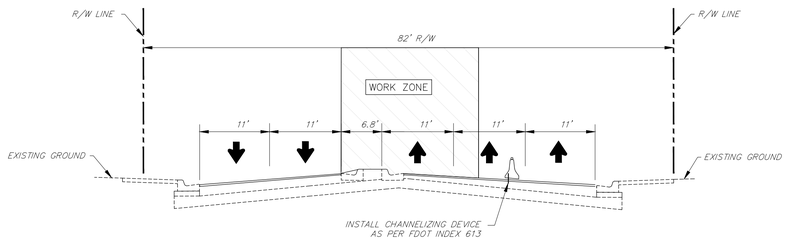
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3. ALL DRIVEWAY APPROACHES WITHIN THE RIGHT-OF-WAY ALONG CAIRO LANE AND NW 127TH STREET ARE TO BE RECONSTRUCTED.
4. NW 127TH STREET BETWEEN CAIRO LANE AND NW 32ND AVE TO BE A PUBLIC ROADWAY.

LEGEND

- RIGHT OF WAY
- PROPOSED SIDEWALK
- PROPOSED PAVEMENT
- PROPOSED GREEN AREA



TYPICAL PAVEMENT SECTION
N.T.S.



MOT SECTION "A"
N.T.S.

TYPICAL SECTION FOR TRAFFIC CONTROL
NW 32nd AVE

1. PLACE SIGNS, TEMPORARY BARRIER AND OTHER TRAFFIC CONTROL DEVICES TO MAINTAIN TRAFFIC AS PER FDOT INDEX NO. 613.
2. THE EXISTING ROADWAY CONSISTS OF TWO (2) NORTHBOUND LANES, TWO (2) SOUTHBOUND LANES, AND MEDIAN AT THE CENTER. ONLY ONE LANE WILL BE CLOSED AS PER THE SECTION SHOWN ON THIS PAGE.
3. MAINTAIN PEDESTRIAN TRAFFIC AS PER FDOT INDEX 660.
4. WORK WILL BE PERFORMED ON OFF PEAK PERIOD.

NOTE:

1. ALL CURB AND GUTTER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOOT STANDARD INDEX 300.
2. ALL PUBLIC SIDEWALK CURB RAMPS CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOOT STANDARD INDEX 304.
3. TRAFFIC MAINTENANCE SHALL BE AS PER THE DETAIL SHOWN ON THIS PAGE AND PER FOOT INDEX 613.

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

ROADWAY PLAN NW 32ND AVE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
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No.	DESCRIPTION	DATE	BY
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3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD
CHECKED: LJ
DRAWN: RE
FINAL CHECK: RR

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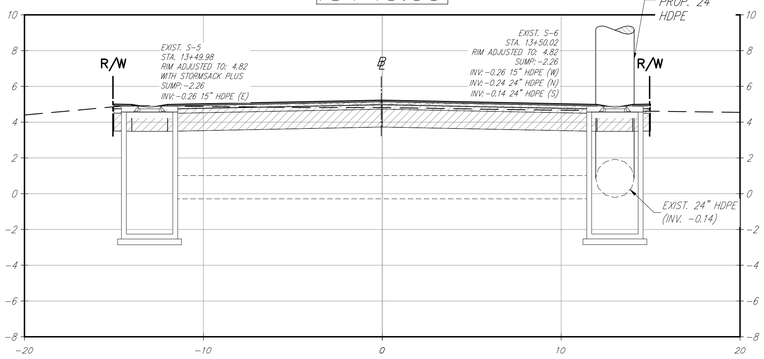
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2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - PMS.DWG
DATE: 7/30/24
SCALE: AS SHOWN

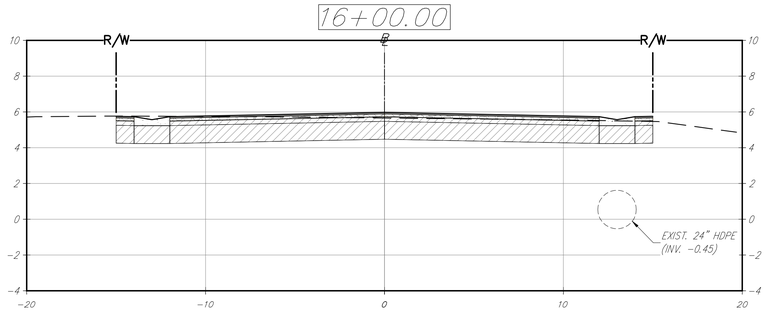
SHEET
C-10

DRAWING No.
15 OF 43

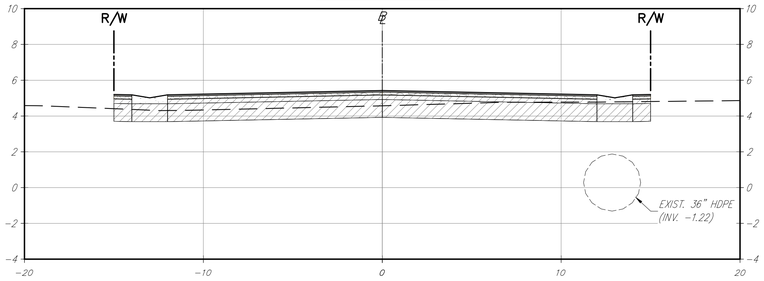
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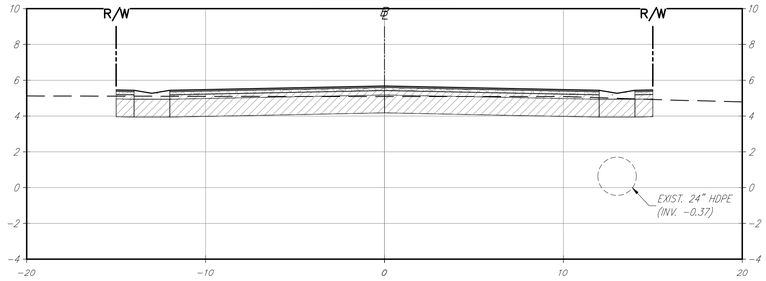
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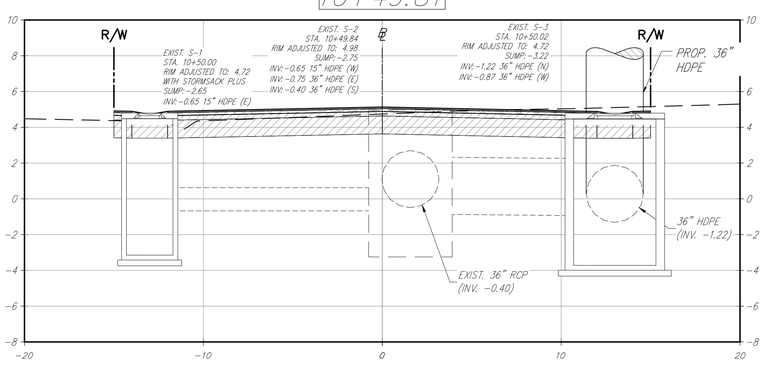
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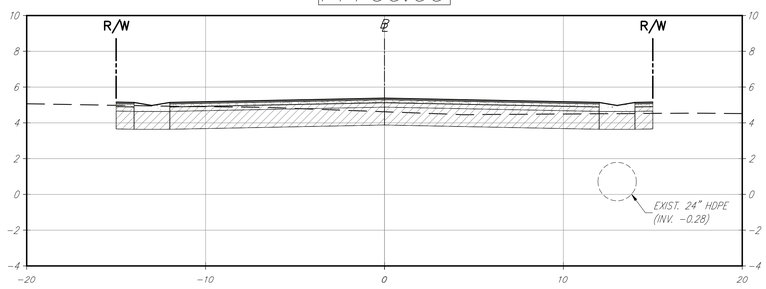
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10+49.81



14+00.00



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – CAIRO LN

DRAWING HISTORY

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30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

PCTS No:

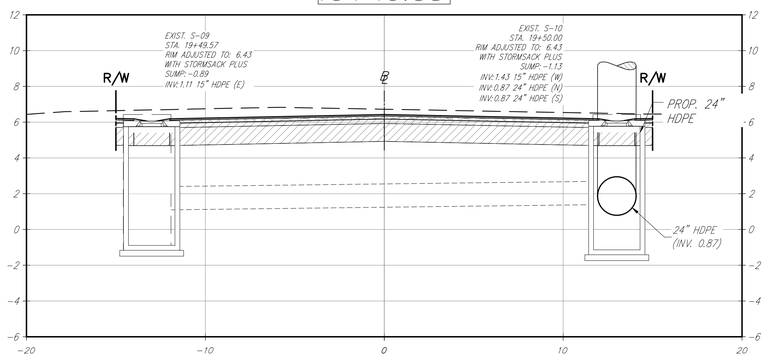
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

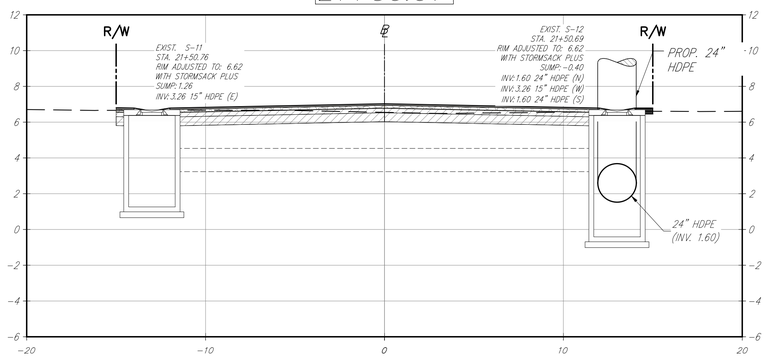
SHEET C-11

DRAWING No. 16 OF 43

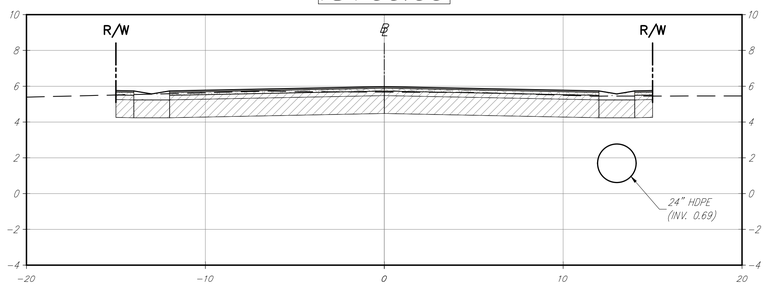
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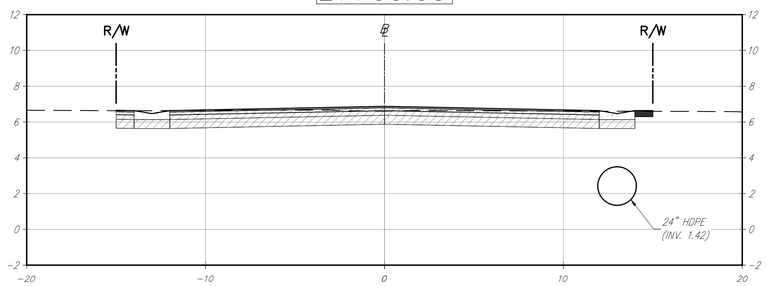
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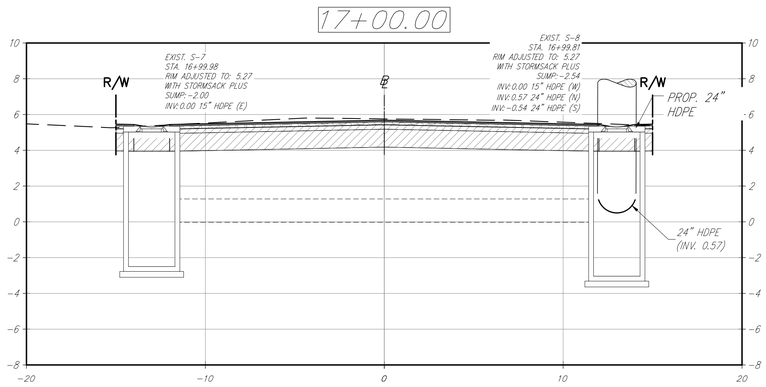
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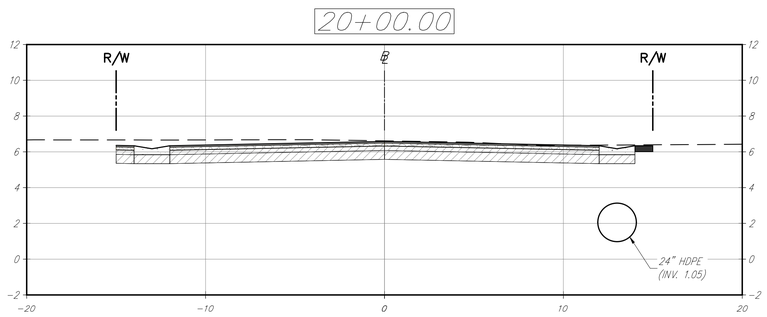
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17+00.00



20+00.00



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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – CAIRO LN

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

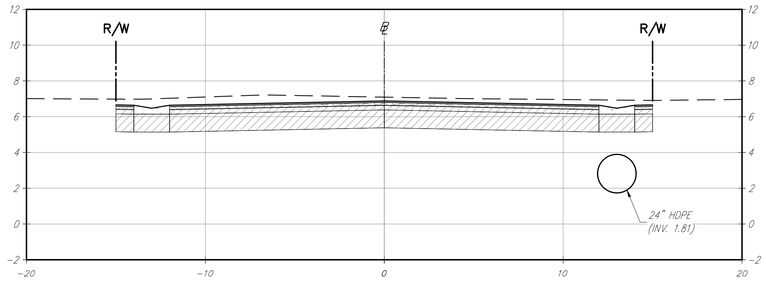
Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

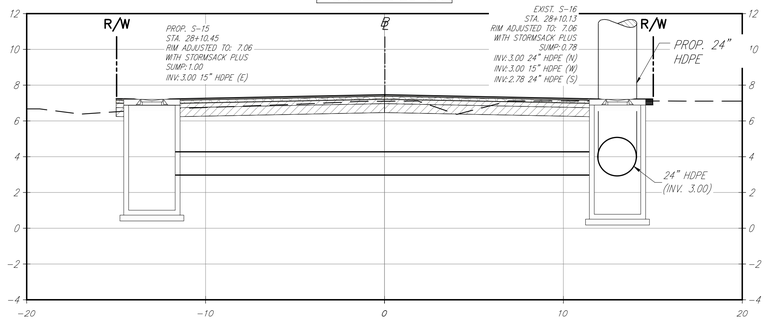
SHEET C-12

DRAWING No. 17 OF 43

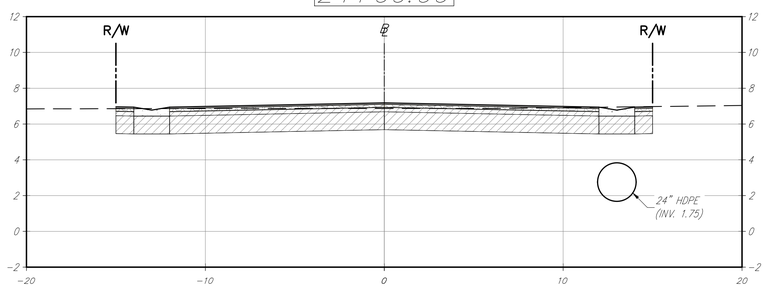
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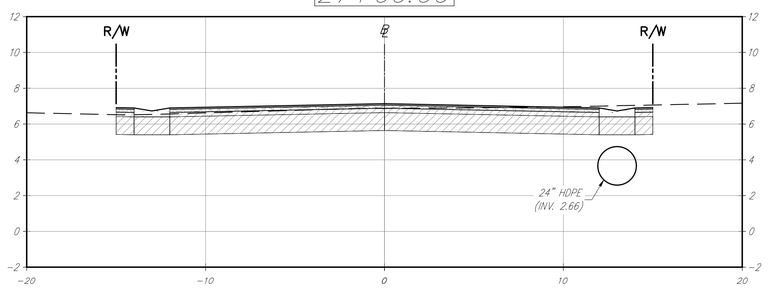
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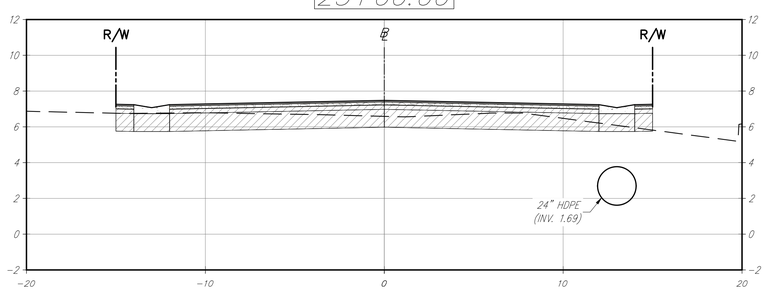
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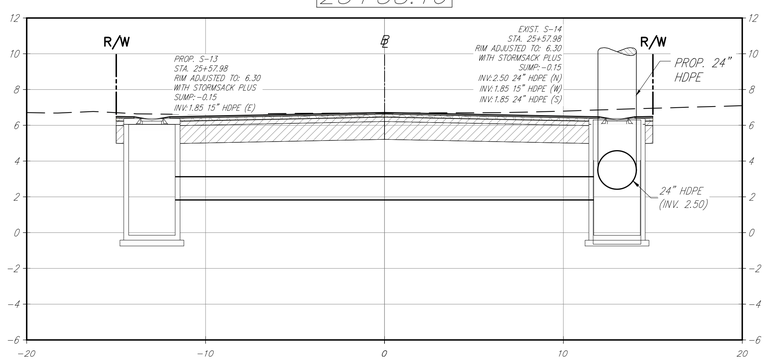
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23+00.00



25+58.16



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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – CAIRO LN

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

PCTS No:

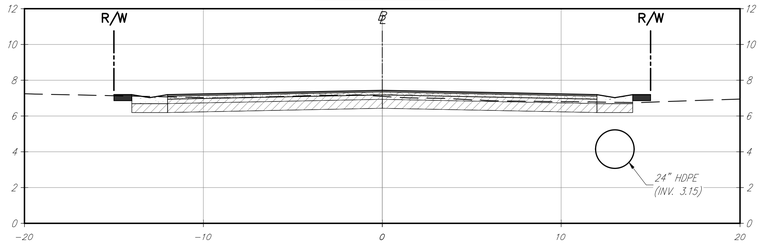
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DATE: 9/20/24 | SCALE: AS SHOWN

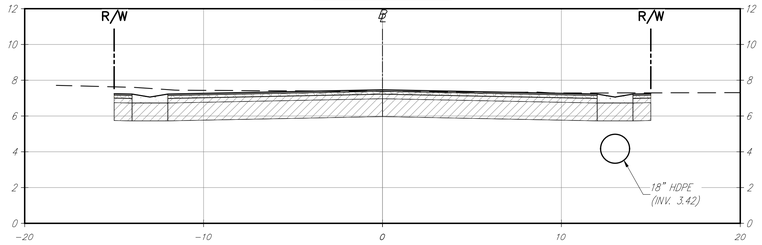
SHEET C-13

DRAWING No. 18 OF 43

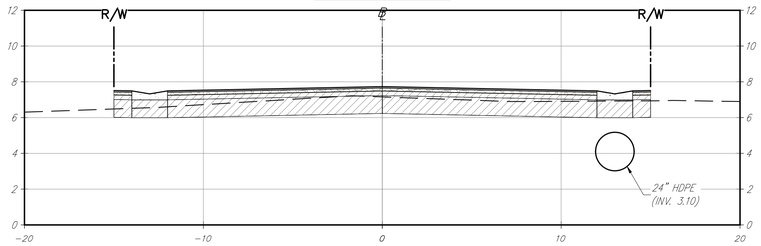
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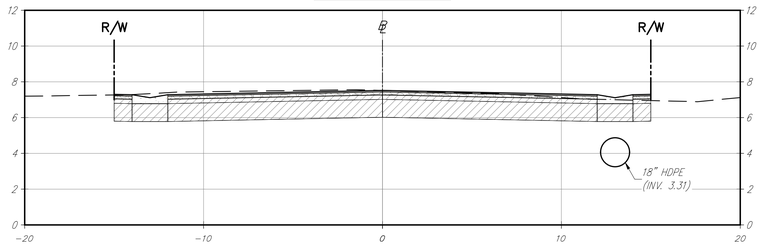
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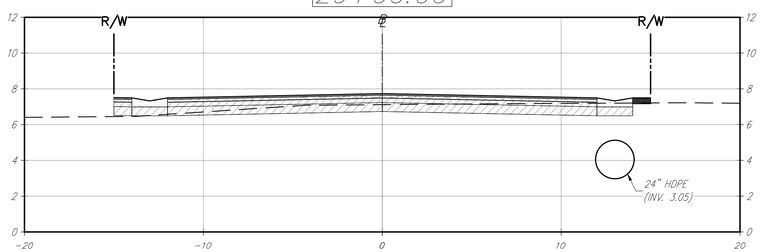
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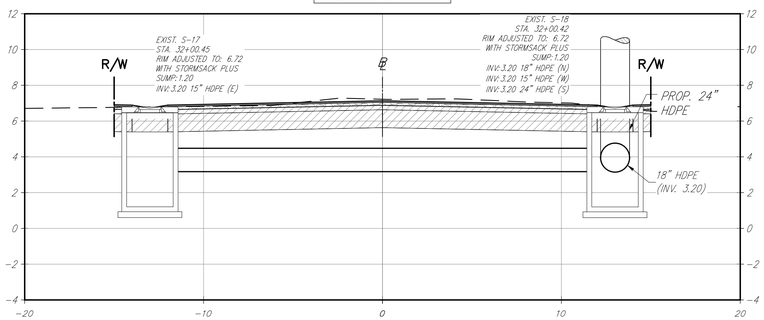
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29+00.00



32+00.44



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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – CAIRO LN

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD. SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

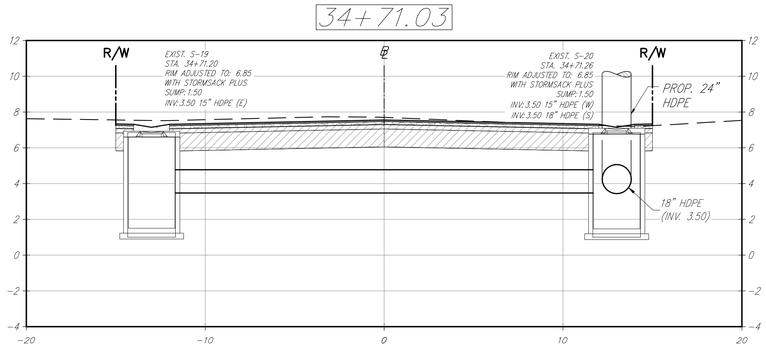
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-14

DRAWING No. 19 OF 43



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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – CAIRO LN

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

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DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

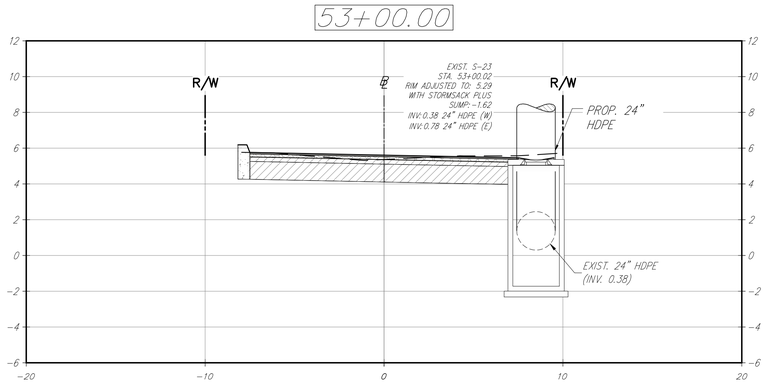
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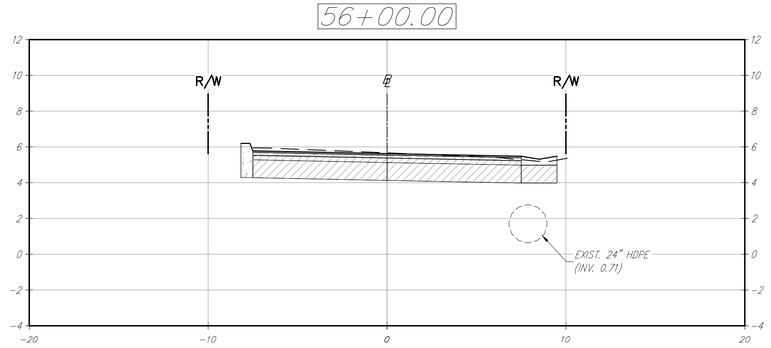
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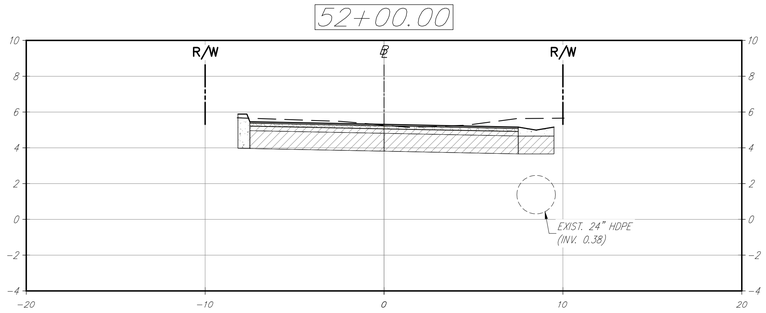
DATE: 9/20/24 | SCALE: AS SHOWN

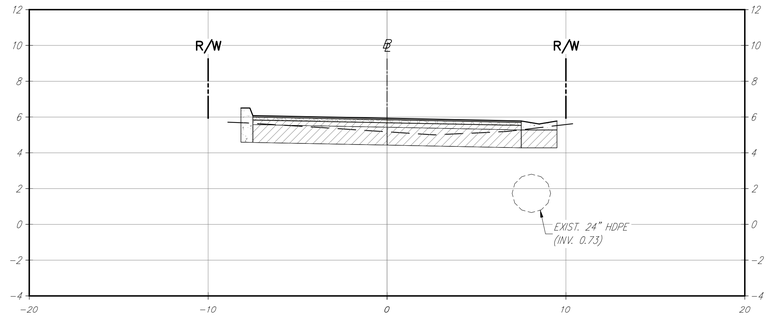
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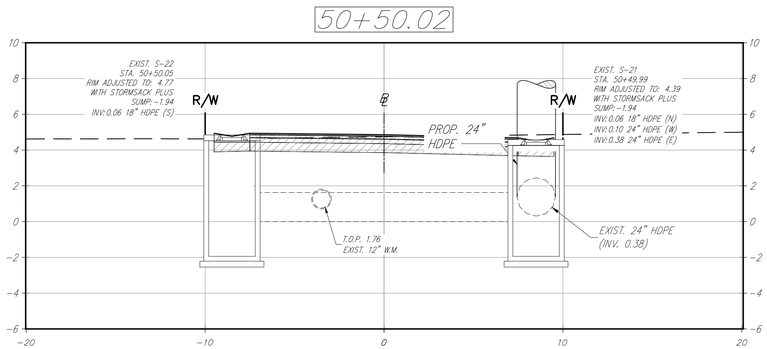
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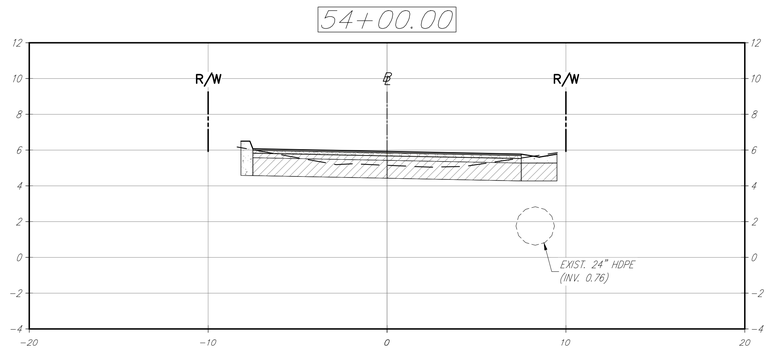












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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM
CROSS SECTIONS – NW 127TH AVE

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

PCTS No:

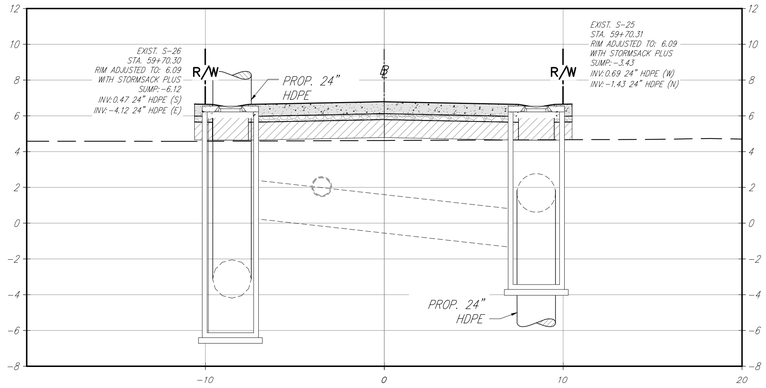
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DATE: 9/20/24 | SCALE: AS SHOWN

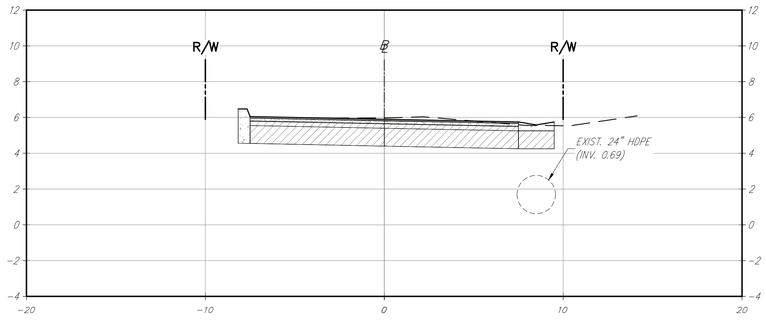
SHEET C-16

DRAWING No. 21 OF 43

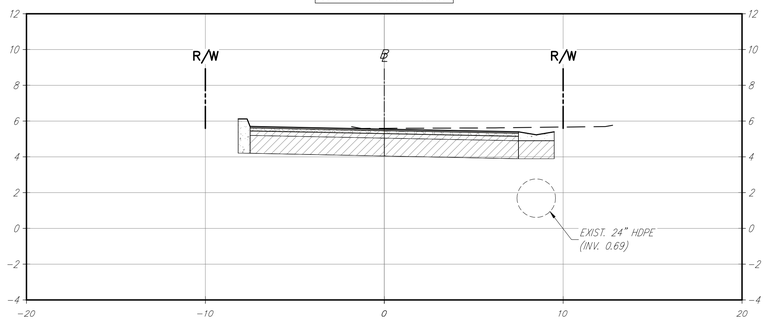
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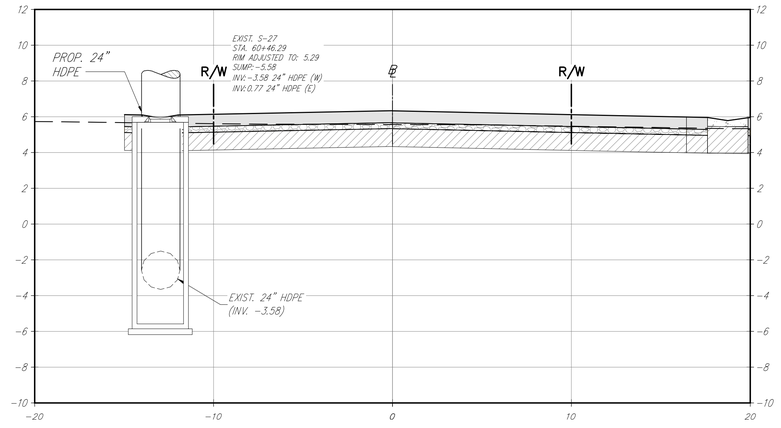
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57+00.00



60+46.18



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Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – NW 127TH AVE

DRAWING HISTORY

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30%			
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APPROVALS

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SECTION HEAD:

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DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA
LICENSE
No. 83476
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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PROJECT No: 19-00098

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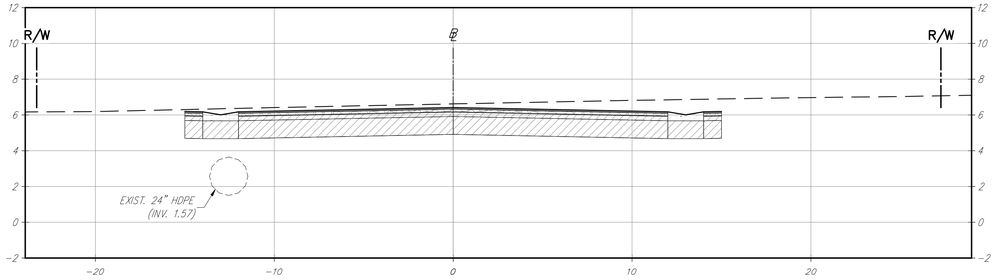
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DATE: 9/20/24 | SCALE: AS SHOWN

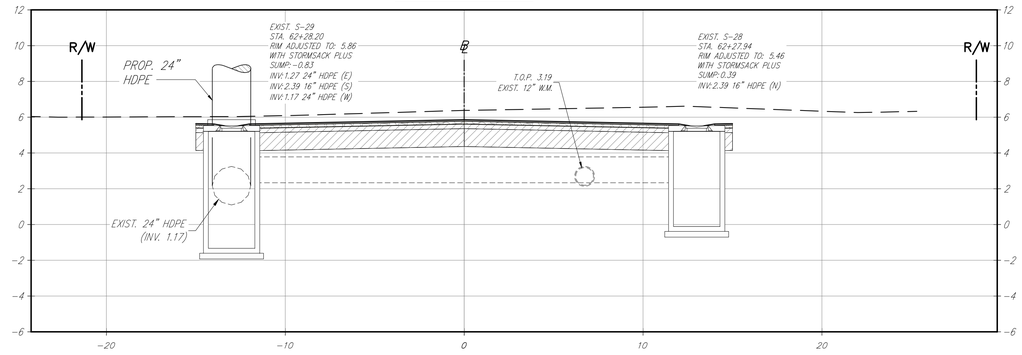
SHEET
C-17

DRAWING No.
22 OF 43

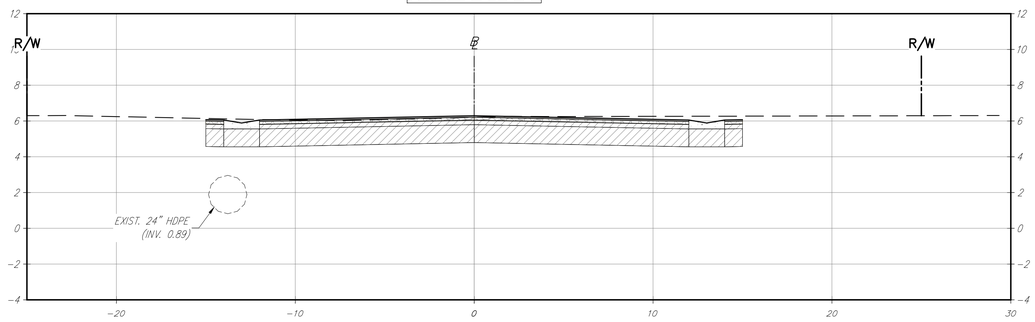
63+00.00



62+27.90



61+00.00



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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – NW 127TH STREET

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

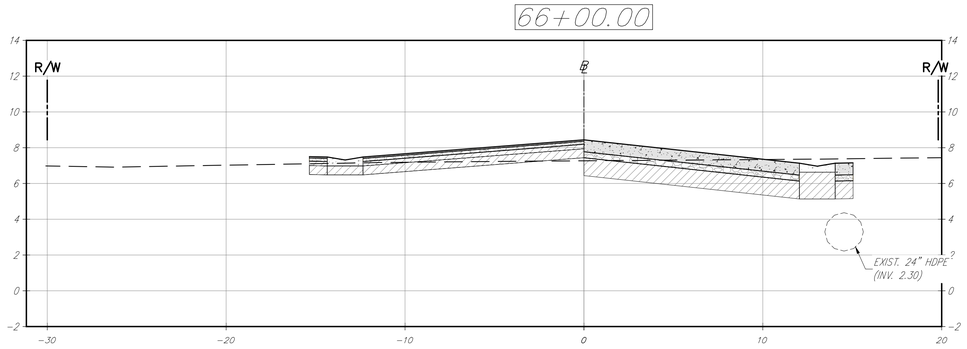
PCTS No:

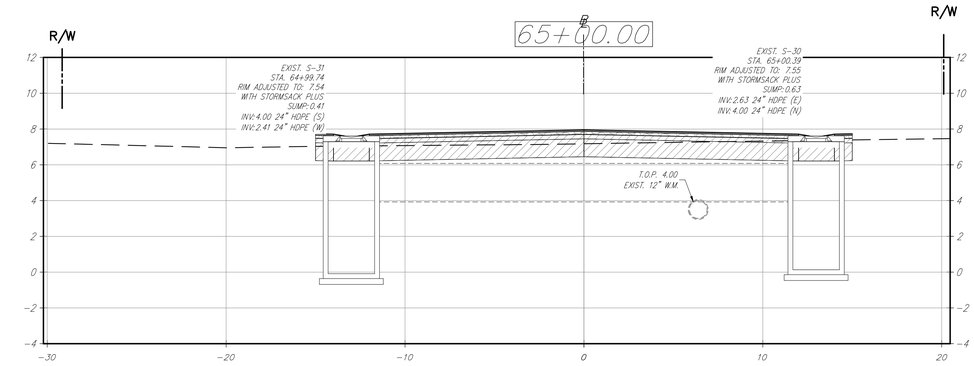
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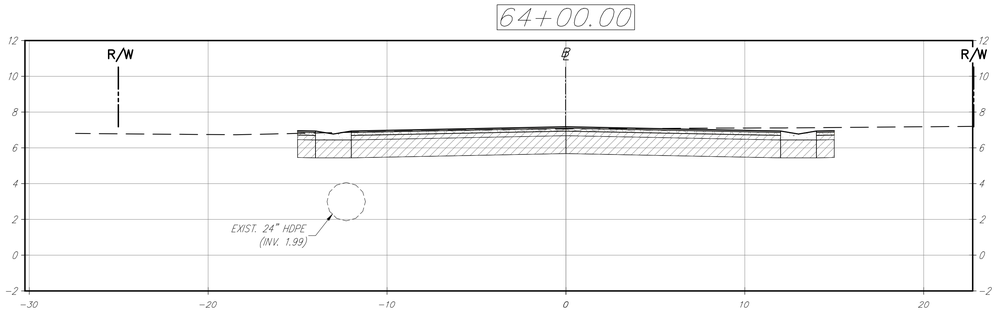
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET
C-18

DRAWING No.
23 OF 43







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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

CROSS SECTIONS – NW 127TH STREET

DRAWING HISTORY

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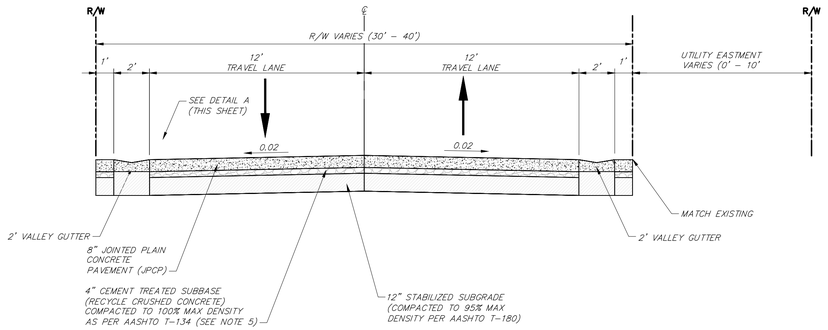
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

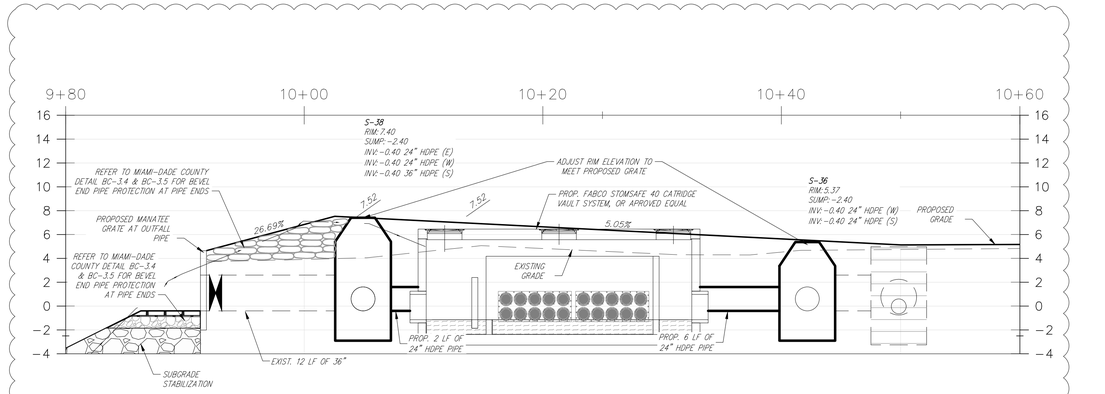
SHEET C-19

DRAWING No. 24 OF 43



TYPICAL CONCRETE SECTION CAIRO LANE STA. 12+71 TO 13+47

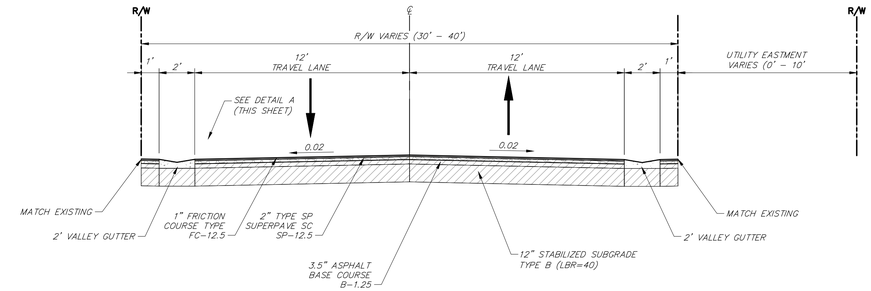
8" JOINTED PLAIN CONCRETE PAVEMENT PAVEMENT (JPCP) *
4" CEMENT TREATED SUBBASE (RECYCLED CRUSHED CONCRETE) COMPACTED TO 100% MAX DENSITY AS PER AASHTO T-134 (SEE NOTE 5)
12" STABILIZED SUBGRADE (COMPACTED TO 95% MAX DESITY PER ASSHTO T-180)



OUTFALL DETAIL

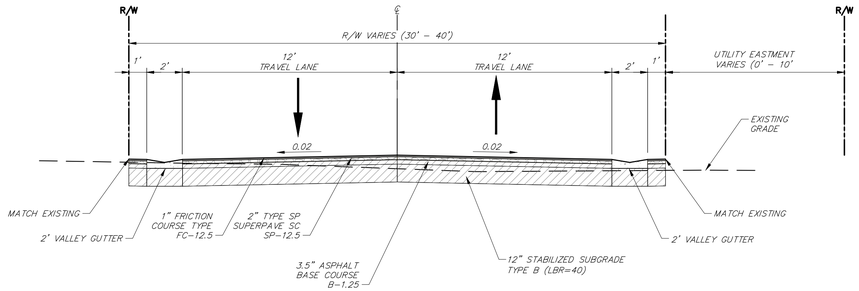
SCALE 1" = 6'

3



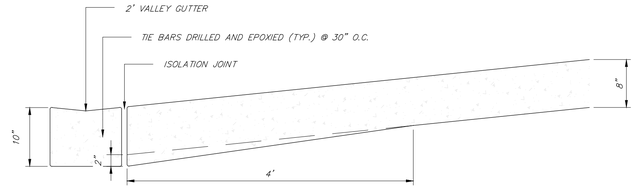
TYPICAL ASPHALT SECTION CAIRO LANE STA. 10+00.00 TO STA. 12+71

1" FRICTION COURSE TYPE FC-12.5
2" TYPE SP SUPERPAVE SC SP-12.5
3.5" ASPHALT BASE COURSE B-1.25
12" STABILIZED SUBGRADE TYPE B (LBR=40)



TYPICAL ASPHALT SECTION CAIRO LANE STA. 13+47 TO STA. 36+33

1" FRICTION COURSE TYPE FC-12.5
2" TYPE SP SUPERPAVE SC SP-12.5
3.5" ASPHALT BASE COURSE B-1.25
12" STABILIZED SUBGRADE TYPE B (LBR=40)

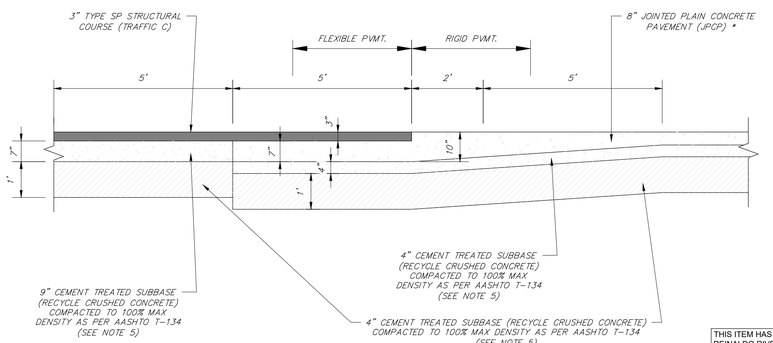


DETAIL 'A' FULLY TAPERED THICKENED EDGE SUPPORT

N.T.S.

TRAFFIC DATA

CURRENT YEAR	= 2015 AADT = 2,000
ESTIMATED OPENING YEAR	= 2017 AADT = 2,080
ESTIMATED DESIGN YEAR	= 2045 AADT = 3,622
K=9% D=50%	T=5% (24 HOUR)
DESIGN SPEED = 30MPH	
POSTED SPEED = 25 MPH	



CONNECTION DETAIL FOR FLEXIBLE/RIGID PAVEMENT

N.T.S.

NOTES:(APPLICABLE TO ALL SHEETS)

1. REFER TO PLANS FOR LOCATIONS OF RIGID PAVEMENT AND FLEXIBLE PAVEMENT.
2. TRANSVERSE DOWELED CONTRACTION JOINTS AT THE PAVEMENT SHALL BE EVERY 12' APART.
3. SAWED TRANSVERSE CONSTRUCTION JOINTS ALONG THE VALLEY GUTTER SHALL BE 6' APART.
4. CONTRACTOR TO HARMONIZE ADJACENT AREAS ALONG BOTH SIDES OF CAIRO LN FOR PROPER SLOPE AND DRAINAGE.
5. SEE SPECIFICATION FOR PROPER GRADATION.
6. BRUSH FINISH WITHIN 1 HR OF CONCRETE PLACEMENT.
7. SAWCUT JOINTS WITHIN 8 HRS OF CONCRETE PLACEMENT.

* FDOT CLASS I CONCRETE WITH MIN. 5000 PSI DAY COMPRESSIVE STRENGTH. SUBMIT DESIGN PRIOR TO PLACEMENT

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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

TYPICAL CROSS SECTIONS

DRAWING HISTORY

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30%			
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90%	X	12/16/22	A.D
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3	DTPW COMMENTS	09/16/24	AD

APPROVALS

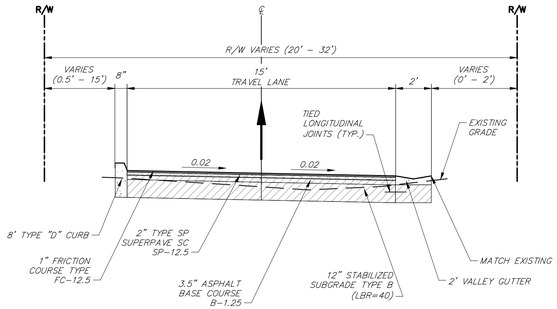
CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
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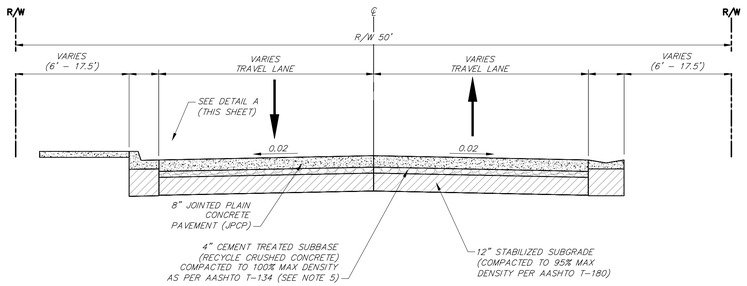
PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – ROADWAY.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-20
DRAWING No. 25 OF 43



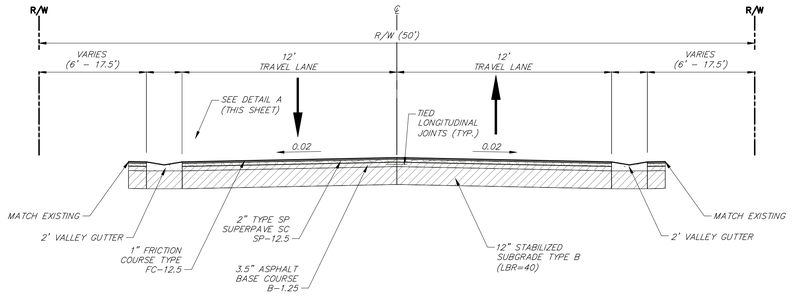
TYPICAL SECTION NW 127TH ST. STA. 50+47 TO STA. 59+65

1" FRICTION COURSE TYPE FC-12.5
2" TYPE SP SUPERPAVE SC SP-12.5
3.5" ASPHALT BASE COURSE B-1.25
12" STABILIZED SUBGRADE TYPE B (LBR=40)



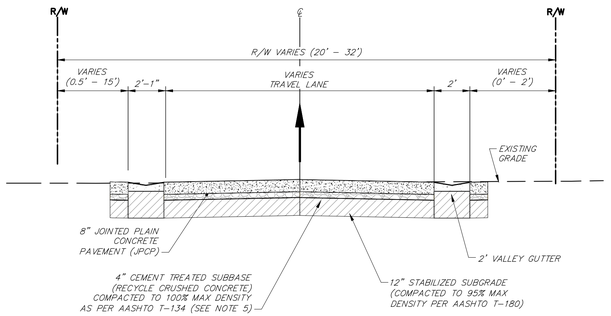
TYPICAL SECTION NW 127TH ST. STA. 65+81 TO STA. 67+22

8" JOINTED PLAIN CONCRETE PAVEMENT PAVEMENT (JPCP) *
4" CEMENT TREATED SUBBASE (RECYCLED CRUSHED CONCRETE) COMPACTED TO 100% MAX DENSITY AS PER AASHTO T-134 (SEE NOTE 5)
12" STABILIZED SUBGRADE (COMPACTED TO 95% MAX DESITY PER ASSHTO T-180)



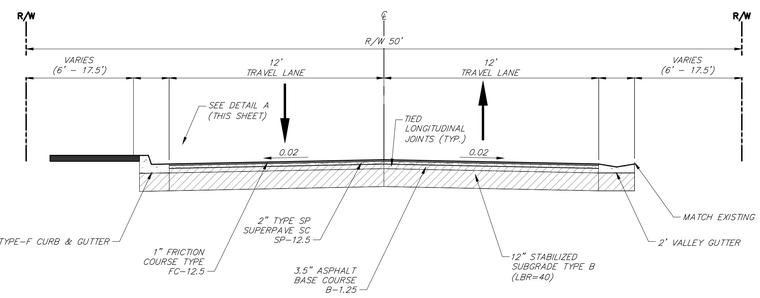
TYPICAL SECTION NW 127TH ST. STA. 60+49 TO STA. 65+81

1" FRICTION COURSE TYPE FC-12.5
2" TYPE SP SUPERPAVE SC SP-12.5
3.5" ASPHALT BASE COURSE B-1.25
12" STABILIZED SUBGRADE TYPE B (LBR=40)



TYPICAL SECTION NW 127TH ST. STA. 59+65 TO STA. 60+49

8" JOINTED PLAIN CONCRETE PAVEMENT PAVEMENT (JPCP) *
4" CEMENT TREATED SUBBASE (RECYCLED CRUSHED CONCRETE) COMPACTED TO 100% MAX DENSITY AS PER AASHTO T-134 (SEE NOTE 5)
12" STABILIZED SUBGRADE (COMPACTED TO 95% MAX DESITY PER ASSHTO T-180)



TYPICAL SECTION NW 127TH ST. STA. 67+22 TO STA. 69+54

1" FRICTION COURSE TYPE FC-12.5
2" TYPE SP SUPERPAVE SC SP-12.5
3.5" ASPHALT BASE COURSE B-1.25
12" STABILIZED SUBGRADE TYPE B (LBR=40)

TRAFFIC DATA

CURRENT YEAR	= 2015 AADT = 2,000
ESTIMATED OPENING YEAR	= 2017 AADT = 2,080
ESTIMATED DESIGN YEAR	= 2045 AADT = 3,622
K=9% D=50%	T=5% (24 HOUR)
DESIGN SPEED = 30MPH	
POSTED SPEED = 25 MPH	

* FDOT CLASS I CONCRETE WITH MIN. 5000 PSI DAY COMPRESSIVE STRENGTH. SUBMIT DESIGN PRIOR TO PLACEMENT

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

TYPICAL CROSS SECTIONS

DRAWING HISTORY

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30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
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REVISIONS

No.	DESCRIPTION	DATE	BY
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APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
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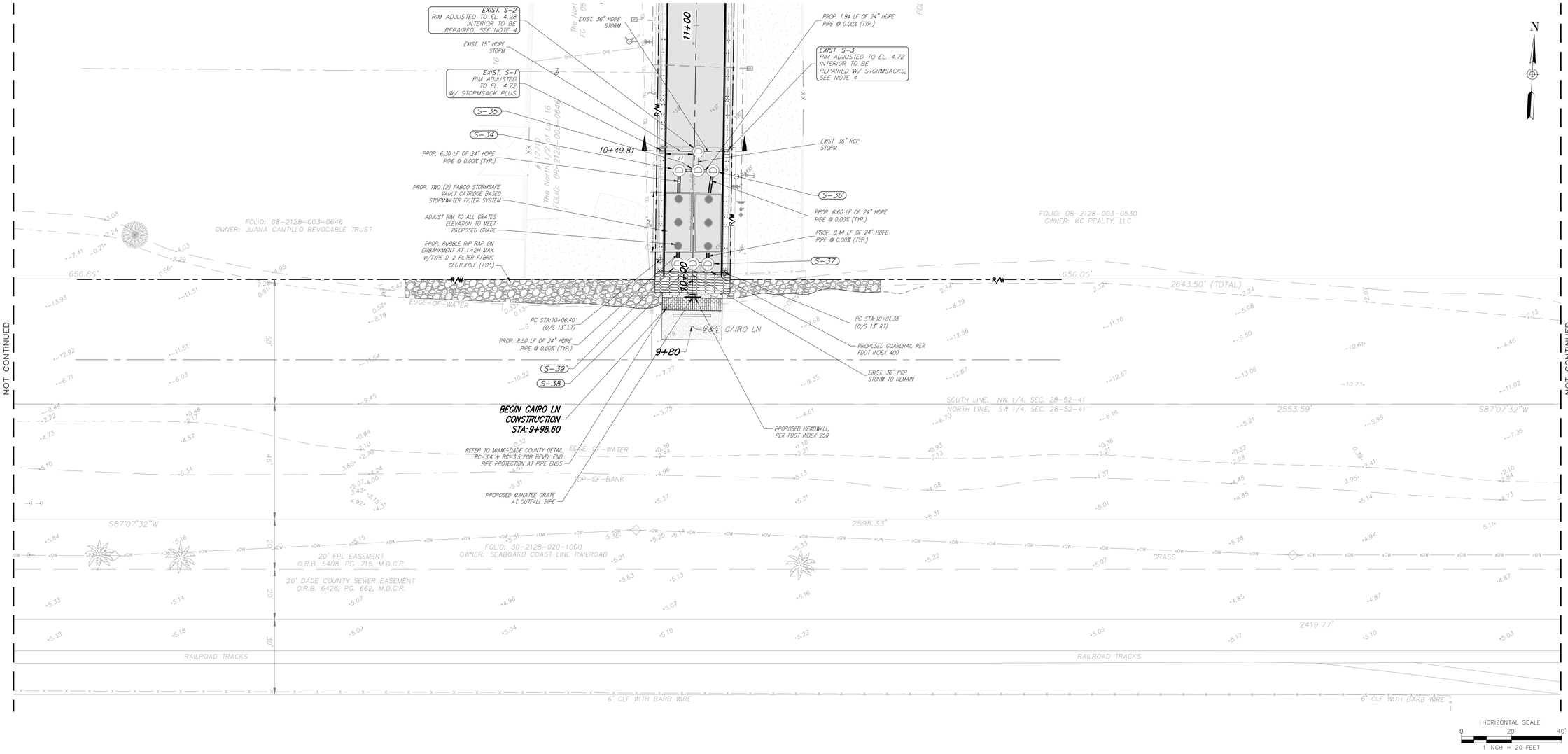
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(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - ROADWAY.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-21

DRAWING No. 26 OF 43



NOTE:

1. DRAWINGS BASED UPON AVAILABLE RECORDS THAT PROVIDE LIMITED DATA REGARDING UNDERGROUND UTILITIES IN THE PROJECT AREA. THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND MATERIALS OF ALL EXISTING UTILITIES AND DRAINAGE AT PROPOSED TIE-INS, CROSSING, AND REMOVALS, TO ALLOW FOR PROPER ALIGNMENT AND CLEARANCES BETWEEN EXISTING AND PROPOSED IMPROVEMENTS.
2. NEW INLET GRATES TO BE PROVIDED TO ALL EXISTING DRAINAGE STRUCTURES ON CAIRO LANE AND NW 127TH STREET.
3. ALL DRIVEWAY APPROACHES WITHIN THE RIGHT-OF-WAY ALONG CAIRO LANE AND NW 127TH STREET ARE TO BE RECONSTRUCTED TO MATCH PROPOSED ROADWAY GRADE.
4. DRAINAGE STRUCTURE INTERIOR TO BE RESURFACED WITH HYDRAULIC WATER-STOP CEMENT CONCRETE MIX, OR APPROVED EQUAL.
5. INFORMATION OF CONTAMINATION IN THE AREA, PLEASE REFER TO SHEETS C-22 AND C-23.
6. ALL INLET STRUCTURES TO HAVE STORMSACK PLUS BY FABCO OR APPROVED EQUAL.

LEGEND

- W.M. — Exist. Water Main
- S.S. — Exist. Storm Sewer
- San. — Exist. Sanitary Sewer
- F.M. — Exist. Force Main
- R/W — Right Of Way Line
- F.M. — Prop. Force Main
- W.M. — Exist. Water Main
- Prop. Concrete Pavement
- Prop. Asphalt Pavement
- Prop. Valley Gutter & Sidewalk
- Exist. Catch Basin
- Prop. Catch Basin
- Prop. Storm Pipe

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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

PROPOSED OUTFALL DETAIL

DRAWING HISTORY

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3	DTPW COMMENTS	09/16/24	AD

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(305) 753-2605

PROJECT No: 19-00098

PCTS No:

FILE NAME: OPA-LOCKA- TASK #4 – ROADWAY CANALDWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-22

DRAWING No. 27 OF 43

LOCATION OF PUBLIC WATER SYSTEM MAINS ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL LENGTH OF PIPE CENTERED)
Storm Sewer; Stormwater Force Main; Reclaimed Water (2)	Water Main — 3 ft. minimum	Water Main — 12 inches is the minimum.	Alternate: 3 ft minimum — Water Main
Vacuum Sanitary Sewer	Water Main — 10 ft. preferred 3 ft. minimum	Water Main — 12 inches preferred 6 inches minimum.	Alternate: 3 ft. minimum — Water Main
Gravity or Pressure; Sanitary Sewer Force Main; Sanitary Sewer Force Main; Reclaimed Water (4)	Water Main — 10 ft. preferred 6 ft. minimum (3)	Water Main — 12 inches is the minimum.	Alternate: 6 ft. minimum — Water Main
On-Site Sewage Treatment & Disposal System	10 ft minimum	–	–

NOTES:
(1) WATER MAIN SHOULD BE ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(3) 3 FT. GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

ITEM	CROSS REF.	SPEC. REF.

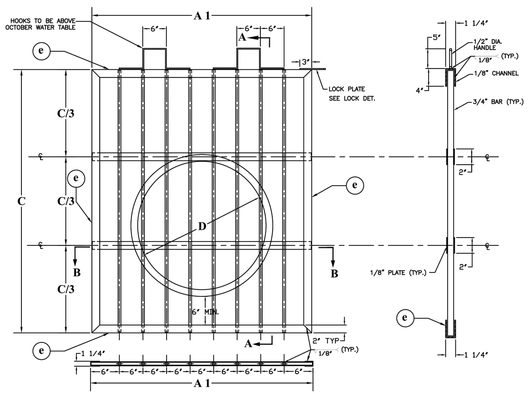
MIAMI-DADE COUNTY — Delivering Excellence Every Day — WATER & SEWER DEPARTMENT

ISSUE DATE	APPROVED BY
10/1/2017	D.V.

STANDARD DETAIL

POTABLE WATER MAIN, WASTEWATER & STORM SEWER CONFLICT

GS 1.5 SHEET 1 OF 2



SECTION B - B
NTS

SECTION A - A
NTS

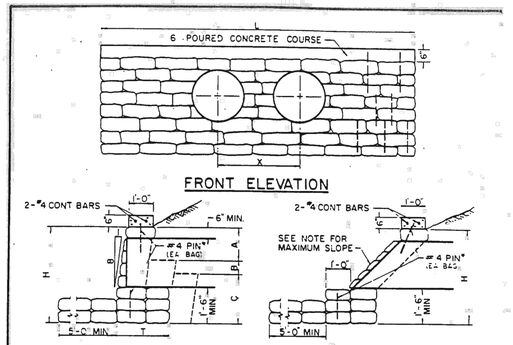
SLIDE GRATE DETAIL
NTS

MIAMI-DADE COUNTY — DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS	APPROVED 5/8/2018	REVISED 5/8/2018	STANDARD STORM DRAINAGE DETAIL — MANATEE GRATE	SD 5.1 SHEET 1 OF 4

MANATEE GRATE TABLE

D	A	C	E	A1	a	b	c	d	e	No. of Bars @ 6" o.c.
18	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X3"	4
24	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X3"	5
30	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X3"	6
36	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X4"	7
42	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X4"	8
48	E+12"	VARIES	O.D.	A-1"	3/8" PLATE	C1/4"X2 1/2"X2 1/2"	3/8"X2 1/2"X5"	L3 1/2"X3 1/2"X3/8"	C1/8"X1 1/4"X4"	8
54	E+12"	VARIES	O.D.	A-1"	3/4" PLATE	C1/2"X2 1/2"X2 1/2"	3/4"X4 1/2"X10"	L3 1/2"X3 1/2"X1/2"	C1/8"X1 1/4"X4"	10
60	E+12"	VARIES	O.D.	A-1"	3/4" PLATE	C1/2"X2 1/2"X2 1/2"	3/4"X4 1/2"X10"	L3 1/2"X3 1/2"X1/2"	C1/8"X1 1/4"X4"	11

MIAMI-DADE COUNTY — DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS	APPROVED 5/8/2018	REVISED 5/8/2018	STANDARD STORM DRAINAGE DETAIL — MANATEE GRATE TABLE	SD 5.1 SHEET 4 OF 4



TYPICAL SECTION STRAIGHT END PIPE

TYPICAL SECTION BEVEL END PIPE

TABLE OF DIMENSIONS

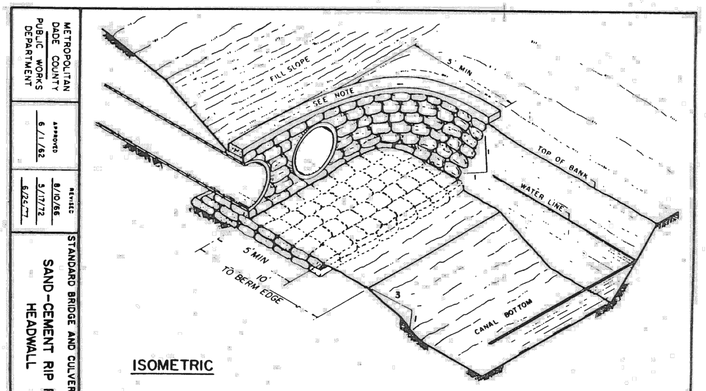
	PIPE SIZE	H	T	A	B	C	X	L PIPE	L PIPES	L PIPES	L PIPES
STRAIGHT END (NO BEVEL)	24	4'-5	2'-0	2'-0	2'-5	0'-0	3'-5	9'-8	13'-1	16'-6	9'--
	30	5'-0	2'-0	2'-0	3'-0	0'-0	4'-3	11'-3	15'-6	19'-9	24'-0
	36	5'-7	2'-0	2'-0	3'-7	0'-0	5'-1	12'-11	18'-0	23'--	28'-2
	42	6'-3	3'-0	2'-0	2'-0	2'-3	6'-0	14'-7	20'-7	26'-7	32'-7
	48	6'-6	3'-0	2'-0	2'-0	2'-6	6'-9	16'-3	23'-0	29'-9	36'-6
BEVEL END ONLY	54	7'-6					7'-8	18'-0	25'-8	33'-6	41'-3
	60	8'-2					8'-6	19'-9	28'-3	36'-9	45'-3
	66	8'-7						21'-7			
	72	9'-3						22'-6			
	84	10'-7						24'-6			
	96	11'-11						26'-6			
	108	13'-3						28'-6			
	120	14'-7						30'-6			
	132	15'-11						32'-6			
	144	17'-3						34'-6			

* EXTEND TYP. 3 BASS
MIX RATIO
3 PARTS SAND
1 PART CEMENT

NOTE: BEVEL SLOPE SHALL NOT BE GREATER THAN III FOR SINGLE TIER CONSTRUCTION WHEN THE PIPE BEVEL IS GREATER THAN (1), HEADWALLS SHALL BE CONSTRUCTED AS REQUIRED FOR STRAIGHT END PIPES.

ITEM	CROSS REF	SPEC REF
FILL SLOPE	R-207	

METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT	APPROVED 6/1/62	REVISED 8/10/66 5/17/72 6-24--	STANDARD BRIDGE AND CULVERT DETAIL — STRAIGHT SAND-CEMENT RIP RAP HEADWALL	BC 3.4 SHEET 1 OF 2



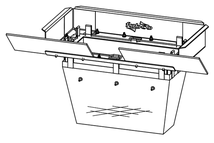
ISOMETRIC

NOTE:
FOR CAP CONSTRUCTION SEE STANDARD DETAIL BC-3.4

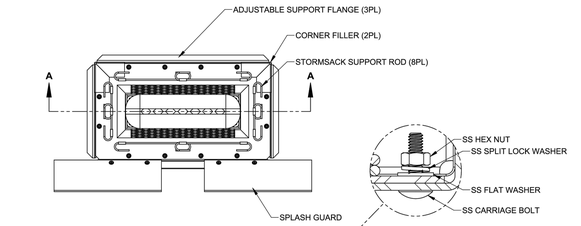
METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT	APPROVED 6/1/62	REVISED 8/10/66 5/17/72 6-24--	STANDARD BRIDGE AND CULVERT DETAIL — SAND-CEMENT RIP RAP HEADWALL	BC 3.5 SHEET 2 OF 2

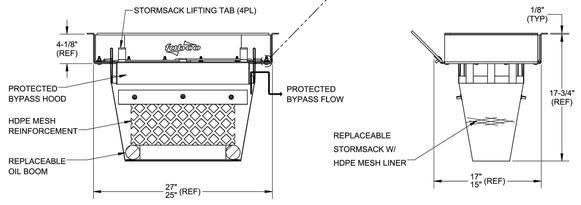
ITEM	CROSS REF	SPEC REF
FILL SLOPE	R-207	

NOTES:
1. TOTAL WEIGHT, EMPTY: 20 LBS (EST)
2. MATERIALS:
   1. FRAME: ALUMINUM ALLOY, 5000 SERIES
   2. STORMSACK: GEOTEXTILE
   3. HARDWARE: STAINLESS STEEL
3. PERFORMANCE CHARACTERISTICS:
   1. DEBRIS CAPACITY: 0.9 CU. FT
   2. FILTERED FLOWRATE: 635 GPM (1.4 CFS)
   3. PROTECTED BYPASS FLOWRATE: 940 GPM (2.1 CFS)
4. CLEAR OPENING RANGE:
   1.MINIMUM SIZE: 15" X 25"
   2.MAXIMUM SIZE: 17" X 27"
5. TYPICAL INSTALLATION:
   CAREFULLY REMOVE THE STORM GRATE, MEASURE CATCH BASIN FRAME CLEAR OPENING AND ADJUST FLANGES TO REST ON GRATE SUPPORT LEDGE. INSTALL STORMSACK AND VERIFY EACH FLANGE IS SECURE AND THE UNIT IS SNUG WITH LITTLE MOVEMENT IN THE DRAIN. INSTALL CORNER FILLERS USING PROVIDED DOUBLE-SIDED TAPE. TUCK RUBBER SPLASH GUARD WITHIN DROP FLANGES TO DIRECT FLOW INTO UNIT. TRIM IF NECESSARY. REINSTALL THE STORM GRATE DIRECTLY ON THE STORMSACK ADJUSTABLE SUPPORT FLANGES.
6. RECOMMENDED MINIMUM VAULT DEPTH 2" BELOW STORMSACK
7. REPLACEMENT STORMSACK P/N: PSS1626-1E-200
8. REPLACEMENT OIL BOOM P/N: PSS1626-1E-720



REFERENCE VIEW





SECTION A-A

ENGINEER AND CONTRACTOR NOTE: FABCO INDUSTRIES WATER QUALITY INSERTS (WQIS) ARE MANUFACTURED TO PROPERLY FIT INLETS BY USING SPECIFIC INFORMATION COMPILED IN A SURVEY OF THE "AS-BUILT" INLET. IN RETROFIT SITUATIONS THE SURVEY IS DONE TO DOCUMENT THE THREE CRITICAL ASPECTS OF WQI DESIGN (GRATE/FRAME MEASUREMENTS, OPENCLEAR SPACE MEASUREMENTS, AND PROTRUSION MEASUREMENTS). IN NEW CONSTRUCTION, FABCO PRODUCT DRAWINGS ARE ESSENTIALLY PLACE HOLDERS BASED ON THE SPECIFIED INLETS. ONCE THE INLETS ARE BUILT, THE PROCESS REVERTS TO THE RETROFIT APPROACH OF SURVEYING THE AS-BUILT INLETS TO CONFIRM FABCO INSERT DESIGN. PLEASE USE THE QR CODE TO ACCESS THE SURVEY FORM AND COMPREHENSIVE GUIDANCE OF THE SURVEY PROCESS. ALTERNATIVELY, NAVIGATE TO www.fabco-industries.com/grate-inlet-survey-guide

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UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SHARP EDGES AND BREAK CORNERS TO .010 - .020 RADIUS. REMOVE ALL BURRS AND SHARP EDGES. PARTS TO BE REPLIED OR PLATED FINISHES

TOLERANCES: DEC .XX ± .02 DEC .XXX ± .005 ANGLES ± 2°

	APPROVAL	DATE
Dsgn	J.C.	9/21/2022
Dwn		
Chkd	J.P.	9/21/2022
MFG		

PROJECT

MATERIAL: SEE NOTES

FABCO INDUSTRIES, INC. 1 FABCO DRIVE FARMINGDALE, NY 11735 WWW.FABCO-INDUSTRIES.COM

fabco

STORMSACK PLUS, NOM. C.S. 16" X 26"

SIZE | TYPE NO. | REV.
B | PSS1626-1E-000 | A

SCALE: NONE | SHEET 1 OF 1

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 09/20/2024.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

STANDARD DETAILS

DRAWING HISTORY

	RELEASED FOR		DATE	BY
30%				
60%		X	11/18/22	AD
90%		X	12/16/22	A.D
PERMIT SET		X	05/05/23	A.D
BID SET		X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

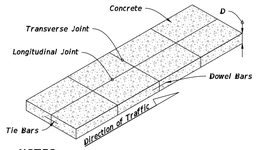
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA- TASK 4 – STANDARD DETAILS – ROADWAY AND STORMDWG
DATE: 9/20/24 | SCALE: AS SHOWN

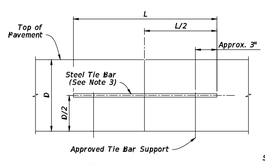
SHEET C-23

DRAWING No. 28 OF 43

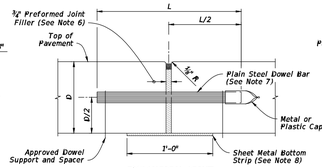


NOTES:

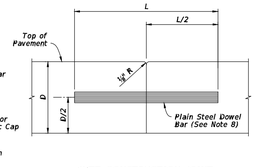
1. For joint seal dimensions see Sheet 2.
2. For slabs poured simultaneously, tie bars may be inserted in the plastic concrete by means approved by the Engineer.
3. For Longitudinal Joints:
   - A. Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Specification 931.
   - B. Provide a tied joint with #4 bars 25" in length at 24" spacing or #5 bars 30" in length at 36" spacing.
4. Transverse joints are to be spaced at a maximum of 15'. Dowel Bars are required at all transverse joints unless otherwise noted in the plans.
5. Expansion joints to be placed at street intersections and other locations as indicated in the Plans. For bridge expansion joints, see Index 370-001.
6. Punch clean holes in preformed joint filler greater than bar diameter.
7. Coat plain steel dowel bars and welded wire basket assemblies in accordance with Specification 931. Lubricate dowel bars in accordance with Specification 350.
8. Sheet metal bottom strips in accordance with Specification 931. Not required with asphalt base.



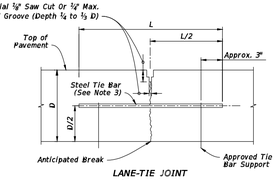
BUTT CONSTRUCTION JOINT



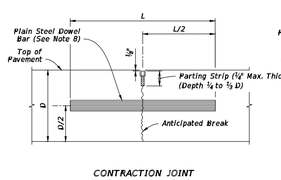
EXPANSION JOINT
(See Note 6)



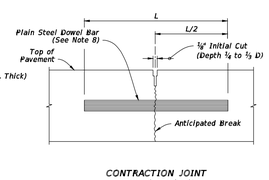
BUTT CONSTRUCTION JOINT
(Used At Discontinuance Of Work)



LANE-TIE JOINT
(See Note 2)

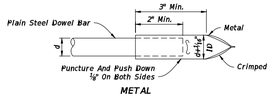


CONTRACTION JOINT
(Vibro Case Method)

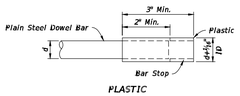


CONTRACTION JOINT
(Sawed Method)

LONGITUDINAL JOINTS — TRANSVERSE JOINTS

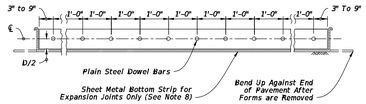


METAL



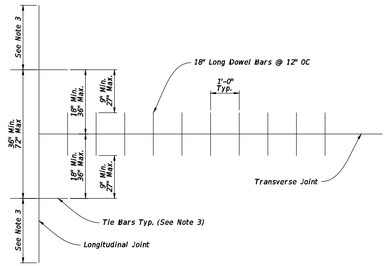
PLASTIC

DOWEL BARS CAPS

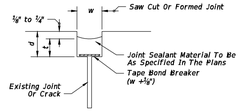


DOWEL BARS (LENGTH 18")	
Pavement Thickness "d"	Diameter
6"-6½"	¾"
7"-8"	1"
8½"-10½"	1¼"
≥11"	1½"

DOWEL BAR LAYOUT

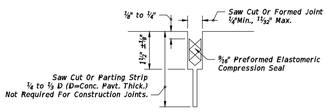


RELATION OF TIE BARS TO DOWEL BARS

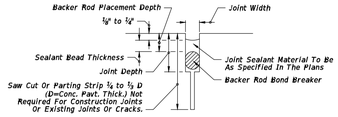


Note: Dimension w will be shown in the plans or established by the Engineer based on field conditions. Dimension d will be constructed so that the shape factor w/t has a maximum value of 2.0 and a minimum value of 1.0.

FOR REHABILITATION PROJECTS
TAPE BOND BREAKER

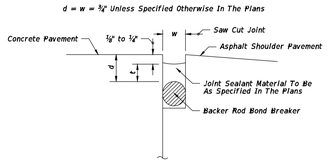


FOR NEW PROJECTS
PREFORMED ELASTOMERIC COMPRESSION SEAL

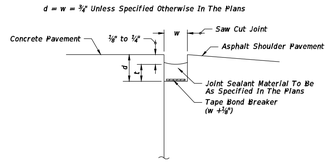


FOR NEW AND REHABILITATION PROJECTS
BACKER ROD BOND BREAKER

CONCRETE-CONCRETE JOINTS



BACKER ROD BOND BREAKER



TAPE BOND BREAKER

FOR NEW AND REHABILITATION PROJECTS;
EITHER TAPE OR BACKER ROD BOND BREAKER REQUIRED;
SHOULDER MUST BE REPAIRED IF PROPER JOINT SHAPE CAN NOT BE ATTAINED

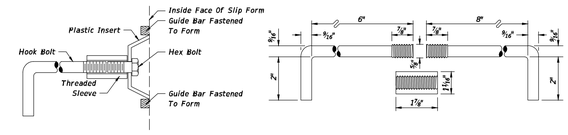
CONCRETE-ASPHALT SHOULDER JOINTS

BACKER ROD BOND BREAKER (CONCRETE-CONCRETE JOINTS)				
JOINT DIMENSIONS (INCHES)				
JOINT WIDTH	SEALANT BEAD THICKNESS	BACKER ROD DIA.	MINIMUM JOINT DEPTH	BACKER ROD PLACEMENT DEPTH
¼	¼	⅜	1	½
⅜	¼	½	1¼	½
½	¼	⅝	1¼	½
⅝	5/16	¾	1½	9/16
¾	⅜	1	1¾	⅝
⅞	7/16	1⅛	1⅞	11/16
1	½	1¼	2	¾
>1	½	1¼+	2+	¾

Unless otherwise indicated on the plans the joint width for new construction will be ¼" for construction joints, ⅜" for all other joints.

For rehabilitation projects the joint width will be shown on the plans or established by the Engineer based on field conditions.

JOINT SEAL DIMENSIONS



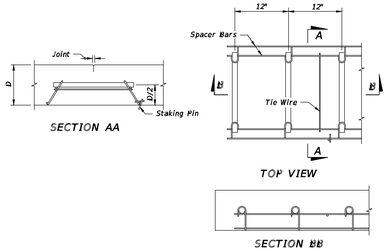
Note: After the concrete has set to the extent that the Keyway will retain its shape, the hex bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

Anchor bolts shall be Grade C in accordance with ASTM A 307.

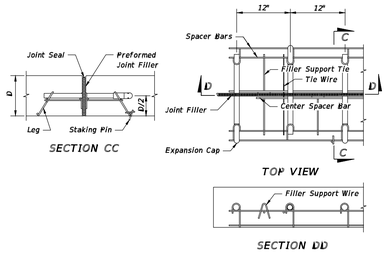
Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.

ALTERNATE KEYWAY AND HOOK BOLT

STEEL HOOK BOLT ASSEMBLY

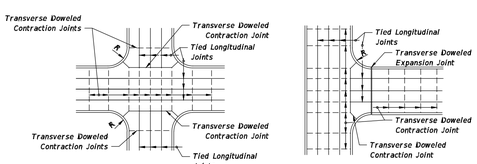


CONTRACTION ASSEMBLY



EXPANSION ASSEMBLY

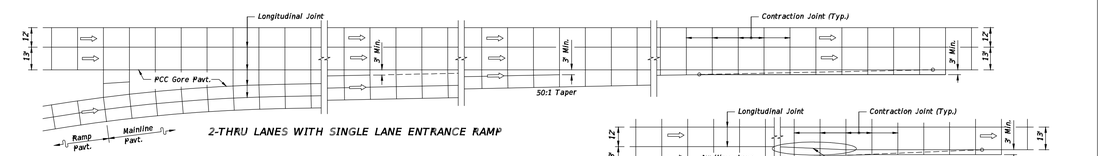
Note: Proprietary contraction and expansion assemblies may be used. Products shall be introduced to the State Construction Office in accordance with section (C) of the Product Evaluation Procedure.

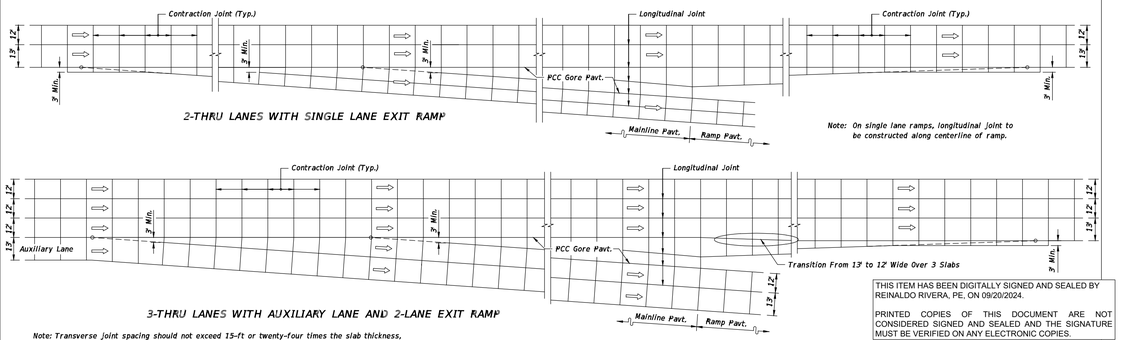


JOINT ARRANGEMENT

NOTES

1. Longitudinal joints will not be required for single lane pavement 14' or less in width. For entrance and exit ramp joint details, see Sheet 4.
2. Arrangement of longitudinal joints are to be as directed by the Engineer.
3. All manholes, meter boxes and other projections into the pavement shall be boxed-in with ½" preformed expansion joint material.





Note: Transverse joint spacing should not exceed 15-ft or twenty-four times the slab thickness, whichever is less. If a lane exceeds 15-ft width, such as single lane ramps and weigh stations, longitudinal joint to be constructed in centerline of lane.

JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS

CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

STANDARD DETAILS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD
CHECKED: LJ
DRAWN: RE
FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 09/20/2024.

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PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK 4 - STANDARD DETAILS - ROADWAY AND STORMDWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET C-24

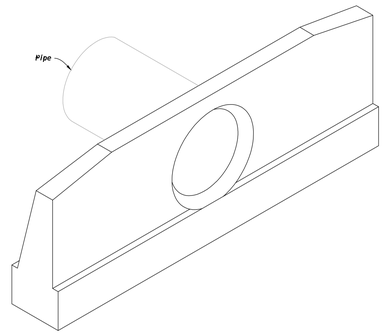
DRAWING No. 29 OF 43

GENERAL NOTES:

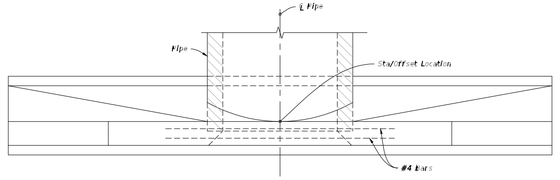
1. Use Class II concrete.
2. Reinforcing steel is either Grade 40 or 60.
3. Endwalls may be cast in place or precast concrete. (Additional reinforcement necessary for handling precast units will be determined by the Contractor or the supplier).
4. Chamfer all exposed edges and corners to ¾".
5. Endwall dimensions, locations and positions are for round and elliptical concrete pipe and for round and pipe-arch corrugated metal pipe. Round concrete pipe shown.
6. On outfall ditches with side slopes flatter than 1:1.5 provide 20' transitions from the endwall to the flatter side slopes, right of way permitting.
7. Construct front slope and ditch transitions in accordance with Index 430-001.
8. Quantities shown are for estimating purposes only.

TABLE OF CONTENTS:

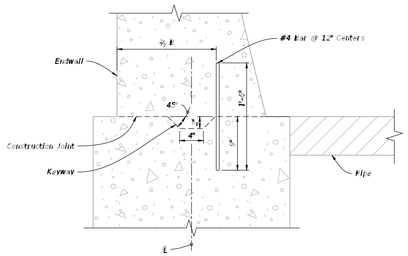
Sheet	Description
1	General Notes and Contents
2	Concrete Endwall Details
3	Concrete and Metal Pipe Tables
4	Spacing For Multiple Pipes



STRAIGHT CONCRETE ENDWALL

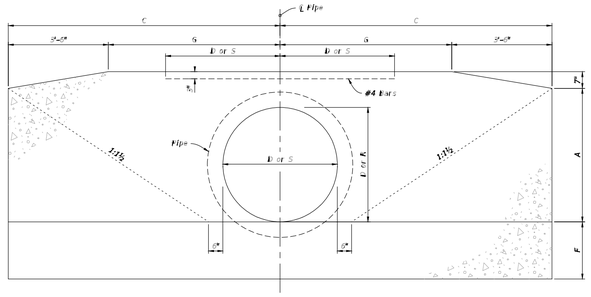


PLAN

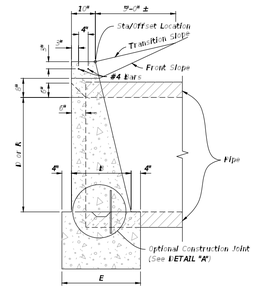


NOTE: Keyway and Dowels are required for optional construction joint.

DETAIL "A"



FRONT ELEVATION



SIDE ELEVATION

CONCRETE ENDWALL DETAILS

LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	INDEX	SHEET
11/01/21				430-030	1 of 4

LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	INDEX	SHEET
11/01/19				430-030	2 of 4

ROUND CONCRETE AND CORRUGATED METAL PIPE

Pipe	Dia. D	Opening Area (SF) Number Of Pipes 1	2	3	4	Dimensions A	B	C	E	F	G	Y	X 0°	15°	30°	45°	Class II Concrete (CY) Number Of Pipe And Skew Angle Of Pipe (α) Single 0°	Double 0°	15°	30°	45°	Triple 0°	15°	30°	45°	Quadruple 0°	15°	30°	45°	Dia. D
Concrete	15"	1.23	2.46	3.69	4.92	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-9"	2'-7"	2'-7"	2'-8"	3'-0"	3'-0"	1.23	1.59	1.60	1.65	1.74	1.94	1.96	2.05	2.23	2.30	2.34	2.47	2.74	15"
	18"	1.77	3.54	5.31	7.08	2'-3"	1'-3"	4'-3"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-2"	1.56	1.99	2.01	2.06	2.17	2.43	2.46	2.56	2.79	2.86	2.91	3.06	3.40	18"
	21"	2.41	4.82	7.23	9.64	2'-5"	1'-4"	5'-0"	2'-0"	1'-4"	1'-0"	3'-2"	3'-2"	3'-3"	3'-8"	4'-9"	1.97													21"
	24"	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-6"	2'-2"	1'-4"	1'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	2.24	2.82	2.84	2.91	3.06	3.39	3.43	3.57	3.87	3.97	4.03	4.24	4.69	24"
	27"	3.98	7.96	11.94	15.92	2'-11"	1'-5"	6'-0"	2'-3"	1'-5"	1'-0"	3'-8"	3'-8"	3'-9"	3'-10"	4'-9"	2.73													27"
	30"	4.91	9.82	14.73	19.64	3'-2"	1'-5"	6'-6"	2'-5"	1'-5"	1'-0"	3'-11"	4'-0"	4'-0"	4'-0"	4'-11"	3.26	4.13	4.16	4.26	4.49	4.98	5.04	5.25	5.69	5.84	5.93	6.24	6.91	30"
	36"	7.07	14.14	21.21	28.28	3'-8"	1'-5"	7'-6"	2'-8"	1'-5"	1'-0"	4'-5"	4'-5"	4'-5"	4'-5"	5'-4"	4.53	5.73	5.79	5.92	6.23	6.92	7.00	7.29	7.91	8.13	8.26	8.69	9.62	36"
	42"	9.62	19.24	28.86	38.48	4'-2"	1'-5"	8'-6"	2'-8"	1'-5"	1'-0"	4'-11"	5'-0"	5'-0"	5'-0"	5'-11"	6.33	8.11	8.17	8.39	8.83	9.80	10.02	10.45	11.38	11.68	11.87	12.51	13.89	42"
	48"	12.57	25.14	37.71	50.28	4'-8"	2'-1"	9'-6"	2'-8"	2'-0"	0'-9"	5'-6"	5'-6"	5'-7"	5'-10"	6'-7"	8.15	10.40	10.48	10.75	11.33	12.54	12.80	13.34	14.50	14.89	15.13	15.93	17.68	48"
	54"	15.90	31.80	47.70	63.60	5'-2"	2'-0"	10'-6"	3'-2"	2'-3"	0'-9"	6'-0"	6'-0"	6'-1"	6'-4"	7'-3"	10.11	13.23	13.35	13.76	14.69	16.27	16.52	17.29	18.86	21.59	22.22	23.93	26.67	54"
Corrugated Metal	15"	1.23	2.46	3.69	4.92	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-9"	2'-7"	2'-7"	2'-8"	3'-0"	3'-0"	1.14	1.62	1.63	1.68	1.78	1.99	2.02	2.11	2.30	2.37	2.41	2.75	2.84	15"
	18"	1.77	3.54	5.31	7.08	2'-3"	1'-3"	4'-3"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-2"	1.59	2.04	2.06	2.11	2.23	2.51	2.54	2.65	2.89	2.96	3.01	3.17	3.53	18"
	21"	2.41	4.82	7.23	9.64	2'-5"	1'-4"	5'-0"	2'-0"	1'-4"	1'-0"	3'-2"	3'-2"	3'-3"	3'-8"	4'-9"														21"
	24"	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-6"	2'-2"	1'-4"	1'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	2.29	2.91	2.93	3.01	3.17	3.52	3.56	3.71	4.03	4.14	4.20	4.43	4.91	24"
	27"	3.98	7.96	11.94	15.92	2'-11"	1'-5"	6'-0"	2'-3"	1'-5"	1'-0"	3'-8"	3'-8"	3'-9"	3'-10"	4'-9"														27"
	30"	4.91	9.82	14.73	19.64	3'-2"	1'-5"	6'-6"	2'-5"	1'-5"	1'-0"	3'-11"	4'-0"	4'-0"	4'-0"	4'-11"	3.34	4.28	4.31	4.43	4.67	5.20	5.27	5.49	5.97	6.13	6.23	6.56	7.29	30"
	36"	7.07	14.14	21.21	28.28	3'-8"	1'-5"	7'-6"	2'-8"	1'-5"	1'-0"	4'-5"	4'-5"	4'-5"	4'-5"	5'-4"	4.64	5.95	6.00	6.15	6.49	7.25	7.34	7.65	8.33	8.57	8.71	9.18	10.20	36"
	42"	9.62	19.24	28.86	38.48	4'-2"	1'-5"	8'-6"	2'-8"	1'-5"	1'-0"	4'-11"	5'-0"	5'-0"	5'-0"	5'-11"	5.49	8.43	8.50	8.73	9.23	10.38	10.52	10.98	11.99	12.32	12.52	13.22	14.73	42"
	48"	12.57	25.14	37.71	50.28	4'-8"	2'-1"	9'-6"	2'-8"	2'-0"	0'-9"	5'-6"	5'-6"	5'-7"	5'-10"	6'-7"	8.38	10.85	10.94	11.23	11.87	13.34	13.51	14.11	15.39	15.82	16.08	16.97	18.90	48"
	54"	15.90	31.80	47.70	63.60	5'-2"	2'-0"	10'-6"	3'-2"	2'-3"	0'-9"	6'-0"	6'-0"	6'-1"	6'-4"	7'-3"	11.77	15.35	15.48	15.90	16.83	18.93	19.18	20.04	21.89	22.51	22.89	24.17	26.96	54"

ELLIPTICAL CONCRETE AND CORRUGATED METAL PIPE ARCH

Pipe	Rise R	Span S	Opening Area (SF) Number Of Pipes 1	2	3	4	Dimensions A	B	C	E	F	G	Y	X 0°	15°	30°	45°	Class II Concrete (CY) Number Of Pipe And Skew Angle Of Pipe (α) Single 0°	Double 0°	15°	30°	45°	Triple 0°	15°	30°	45°	Quadruple 0°	15°	30°	45°	Rise R	Span S	Approx. Equiv. Round
Concrete	12"	18"	1.3	2.6	3.9	5.2	1'-3"	1'-2"	3'-0"	1'-10"	1'-2"	0'-3"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.09	1.45	1.46	1.51	1.60	1.80	1.82	1.91	2.09	2.16	2.20	2.33	2.60	12"	18"	15"
	14"	23"	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-3½"	1'-11"	1'-3"	0'-3"	3'-3"	3'-3"	3'-4"	3'-8"	4'-10"	1.36	1.82	1.84	1.89	2.01	2.29	2.32	2.43	2.68	2.75	2.80	2.97	3.33	14"	23"	18"
	19"	30"	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'-1½"	2'-0"	1'-4"	1'-7½"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"	1.89	2.55	2.57	2.65	2.82	3.22	3.27	3.43	3.77	3.88	3.95	4.19	4.70	19"	30"	24"
	24"	36"	5.1	10.2	15.3	20.4	2'-8"	1'-5"	6'-3"	2'-2"	1'-5"	2'-2"	5'-2"	5'-2"	5'-3"	5'-8"	6'-8"	2.64	3.55	3.58	3.69	3.93	4.48	4.54	4.77	5.24	5.39	5.49	5.82	6.53	24"	36"	30"
	29"	45"	7.4	14.8	22.2	29.6	3'-1"	1'-6"	7'-3"	2'-5"	1'-6"	3'-0"	6'-1"	6'-0"	6'-0"	6'-4"	7'-5"	3.32	4.48	4.52	4.66	4.96	5.64	5.73	6.00	6.60	6.80	6.92	7.34	8.24	29"	45"	36"
	34"	53"	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-11½"	2'-5"	1'-7"	4'-5½"	7'-1"	7'-1"	7'-1"	7'-4"	8'-2"	4.24	5.76	5.81	6.00	6.39	7.29	7.40	7.76	8.55	8.81	8.97	9.52	10.70	34"	53"	42"
	38"	60"	12.9	25.8	38.7	51.6	3'-10"	1'-8"	8'-6"	2'-5"	1'-8"	5'-4"	7'-11"	7'-11"	8'-0"	8'-3"	9'-2"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.71	11.05	11.25	11.95	13.46	38"	60"	48"
	43"	68"	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-4½"	2'-6"	1'-10"	6'-2½"	8'-10"	8'-10"	8'-10"	9'-2"	10'-2"	6.63	9.01	9.09	9.38	10.00	11.39	11.56	12.13	13.36	13.77	14.02	14.88	16.73	43"	68"	54"
	48"	76"	20.5	41.0	61.5	82.0	4'-8"	2'-1"	10'-3"	2'-6"	2'-0"	7'-1"	9'-9"	9'-9"	10'-1"	11'-3"	12'-5"	8.66	11.74	11.85	12.22	13.02	14.82	15.04	15.77	17.37	17.91	18.23	19.34	21.74	48"	76"	60"
	53"	83"	24.6	49.2	73.8	98.4	5'-1"	2'-3"	11'-1½"	2'-6"	2'-2"	8'-1"	10'-7½"	10'-7½"	10'-11"	12'-3"	13'-5"	10.50	14.38	14.52	14.98	15.97	18.83	21.40	21.79	22.86	25.18	25.57	26.44	28.06	31.53	53"	83"	66"
	58"	91"	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-0½"	3'-6"	2'-10"	9'-0½"	11'-4"	11'-4"	11'-4"	11'-9"	13'-1"	16.46	22.26	22.46	23.16	24.66	28.05	28.46	29.85	32.25	33.85	34.46	36.55	41.05	58"	91"	72"
Corrugated Metal	13"	17"	1.1	2.2	3.3	4.4	1'-9"	1'-2"	3'-1½"	1'-10"	1'-2"	0'-4"	2'-5"	2'-5"	2'-6"	2'-9"	3'-7"	1.16	1.47	1.48	1.52	1.60	1.76	1.80	1.88	2.04	2.09	2.12	2.23	2.46	13"	17"	15"
	15"	21"	1.6	3.2	4.8	6.4	1'-11"	1'-2"	4'-3"	1'-10"	1'-2"	0'-9"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.33	1.69	1.70	1.75	1.84	2.04	2.06	2.15	2.33	2.40	2.44	2.57	2.84	15"	21"	18"
	20"	28"	2.8	5.6	8.4	11.2	2'-4"	1'-3"	5'-2"	1'-11"	1'-3"	0'-9"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	1.78	2.31	2.33	2.39	2.53	2.83	2.87	2.99	3.26	3.36	3.42	3.60	4.01	20"	28"	24"
	24"	35"	4.3	8.6	12.9	17.2	2'-9"	1'-4"	6'-1½"	2'-2"	1'-4"	2'-5½"	4'-0"	4'-0"	4'-0"	4'-3"	5'-3"	2.34	3.03	3.05	3.14	3.32	3.72	3.77	3.93	4.29	4.40	4.47	4.72	5.25	24"	35"	30"
	29"	42"	5.9	11.8	17.7	23.6	3'-1"	1'-5"	6'-10½"	2'-1"	1'-5"	3'-4½"	4'-9"	4'-9"	4'-9"	4'-11"	5'-8"	3.13	4.06	4.09	4.20	4.45	4.99	5.06	5.28	5.76	5.93	6.03	6.36	7.09	29"	42"	36"
	33"	49"	8.4	16.8	25.2	33.6	3'-5"	1'-6"	7'-8"	2'-4"	1'-6"	4'-2"	5'-5"	5'-5"	5'-5"	5'-8"	6'-6"	3.83	5.00	5.04	5.18	5.46	6.16	6.24	6.52	7.12	7.32	7.44	7.86	8.76	33"	49"	42"
	38"	57"	10.6	21.2	31.8	42.4	3'-10"	1'-7"	8'-7½"	2'-5"	1'-7"	5'-1½"	6'-4"	6'-4"	6'-4"	6'-7"	7'-4"	4.67	6.31	6.36	6.53	6.91	7.74	7.84	8.18	8.93	9.18	9.33	9.85	10.96	38"	57"	48"
	43"	64"	13.2	26.4	39.6	52.8	4'-3"	1'-8"	9'-4½"	2'-6"	1'-8"	6'-0½"	7'-1"	7'-1"	7'-1"	7'-4"	8'-2"	5.88	7.64	7.70	7.91	8.37	9.40	9.52	9.94	10.86	11.15	11.33	11.97	13.33	43"	64"	54"
	47"	71"	16.9	33.8	50.7	67.6	4'-7"	1'-10"	10'-4"	2'-6"	2'-0"	6'-10"	7'-10"	7'-10"	8'-0"	8'-3"	9'-1"	7.80	10.15	10.23	10.51	11.12	12.49	12.65	13.22	14.43	14.85	15.10	15.94	17.77	47"	71"	60"

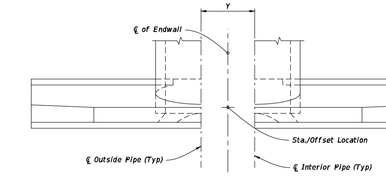
NOTES:

1. Dimension X is calculated as: X = S*SEC α.
2. Select tabular quantities using skew values as follows:

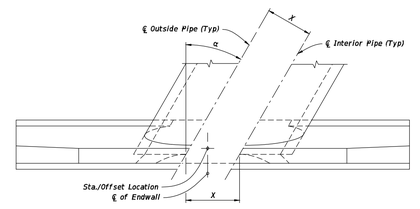
End Skew to Pipe	Use Tabulated Value
0° to 5°	0°
6° to 15°	15°
16° to 30°	30°
31° or Over	45°

CONCRETE AND METAL PIPE TABLES

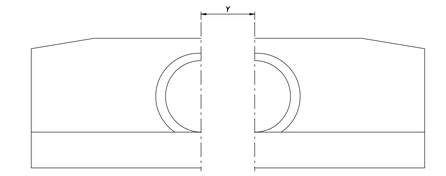
LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	INDEX	SHEET
11/01/21				430-030	3 of 4



PLAN

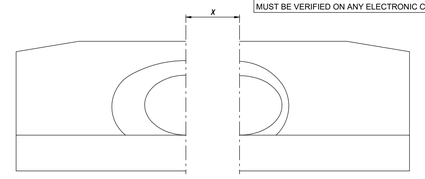


PLAN



FRONT ELEVATION

NORMAL PIPE



FRONT ELEVATION

SKEWED PIPE

(Multiple Pipe Shown, Single Pipe Similar)

LEGEND:

α Pipe Skew Angle
S Center to Center between pipes
X Center to Center along front of Headwall

SPACING FOR MULTIPLE PIPES

LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	INDEX	SHEET
11/01/19				430-030	4 of 4

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CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

STANDARD DETAILS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD
CHECKED: LJ
DRAWN: RE
FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK 4 – STANDARD DETAILS – ROADWAY AND STORMLDWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET C-25

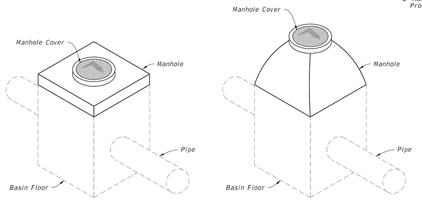
DRAWING No. 30 OF 43

GENERAL NOTES:

1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.
2. Include "Adjustable" on the cover for Type 1 manhole adjustable frames.
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 931. WWR must be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
5. Welding of splices and laps is permitted. Use AASHTO M259 requirements and restrictions on welds.
6. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.
7. Precast opening for pipe must be the pipe OD plus 6" (± 2" tolerance). Use mortar to seal the pipe into the opening of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2½" wide.

TABLE OF CONTENTS:

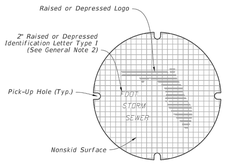
Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure Filter Fabric Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Skewed Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details



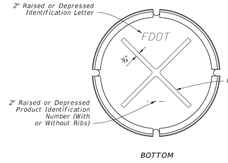
TYPE 7

TYPE 8

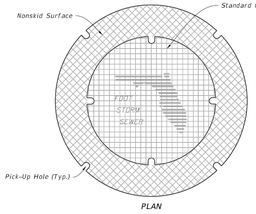
MANHOLE TOPS



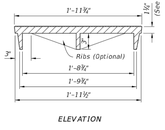
PLAN



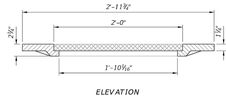
BOTTOM



PLAN



ELEVATION
1-PIECE COVER



ELEVATION
2-PIECE COVER

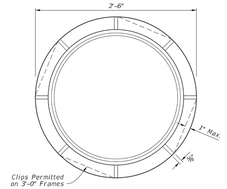
MANHOLE COVERS

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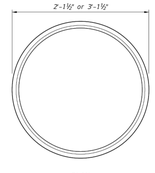
TABLE 1 WEIGHT OF CASTINGS (lb)

Frame Type	2'-0" OPENING Frame	Cover (Std.)	Frame	3'-0" OPENING 2-Piece Cover Inside	Outside	Total
I	155	190	220	190	220	410
II	145	190	235	190	220	410
III	90	190	180	190	220	410

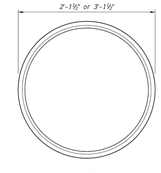
NOTE:
Frame Type 1 in Table 1, includes Adjustable frames.



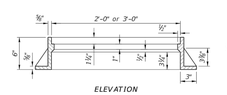
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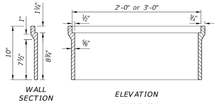
PLAN



PLAN

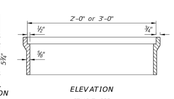


ELEVATION
TYPE I
(For Manholes)



WALL SECTION

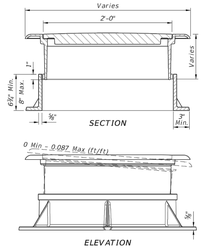
ELEVATION
TYPE II
(For Curb Inlets Types 1, 2, 3, & 4)



WALL SECTION

ELEVATION
TYPE III
(For Curb Inlets Types 7 & 8)

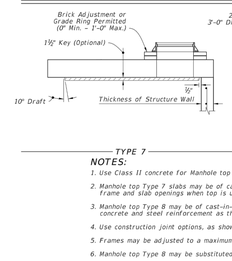
MANHOLE FRAMES



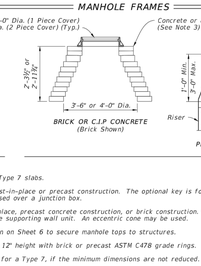
SECTION

ELEVATION

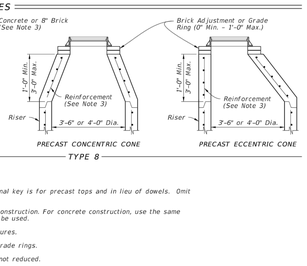
TYPE I ADJUSTABLE FRAME



TYPE 7



BRICK OR C.I.P CONCRETE (Brick Shown)



PRECAST CONCENTRIC CONE

PRECAST ECCENTRIC CONE

TYPE 8

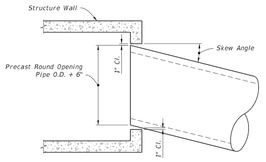
NOTES:

1. Use Class II concrete for Manhole top Type 7 slabs.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Omit frame and slab openings when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.
4. Use construction joint options, as shown on Sheet 6 to secure manhole tops to structures.
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (h) above pipe opening cannot be maintained with Type 8.

MANHOLE TOPS

MANHOLE FRAMES AND MANHOLE TOPS

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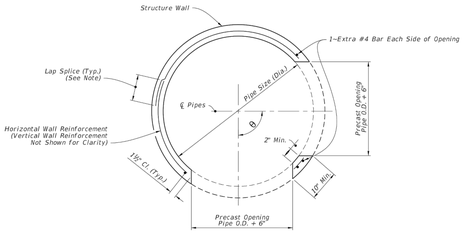
PLAN VIEW

TABLE 4 - MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

	WALL THICKNESS	PIPE SIZE 18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
MAXIMUM SKEW ANGLE	8"	19°	17°	16°	16°	15°	14°	14°	13°	13°	13°	12°	12°
	6"	21°	20°	18°	17°	17°	16°	15°	15°	14°	14°	13°	13°

NOTE:
These values are based on 2" clearance for precast structures. Larger skews are possible for Cast-In-Place Structures or elliptical pipe openings when approved by the Engineer.

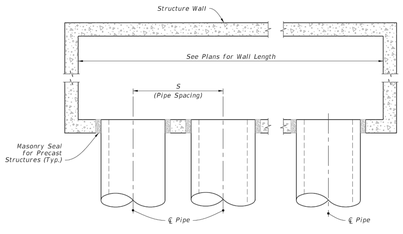
MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS



PLAN VIEW

NOTE:
Lap splice: 20 bar diameter for deformed wire or bar, but not less than vertical wire spacing plus 2" for WWR or 40 bar diameters for smooth wire.

MULTIPLE PIPE CONNECTIONS - PRECAST ROUND STRUCTURES



PLAN VIEW

TABLE 5 - MINIMUM SIZES FOR MULTIPLE PARALLEL PIPE CONNECTIONS

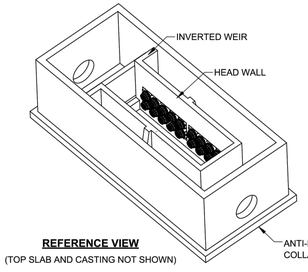
PIPE SIZE	PIPE SPACING (S)
18"	2'-10"
24"	3'-5"
30"	4'-3"
36"	5'-1"
42"	6'-0"
48"	6'-9"
54"	7'-8"
60"	8'-6"
66"	9'-0"
72"	10'-0"
78"	10'-9"
84"	11'-8"

MULTIPLE PARALLEL PIPE CONNECTIONS - RECTANGULAR STRUCTURES

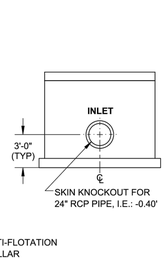
MISCELLANEOUS PIPE CONNECTION DETAILS

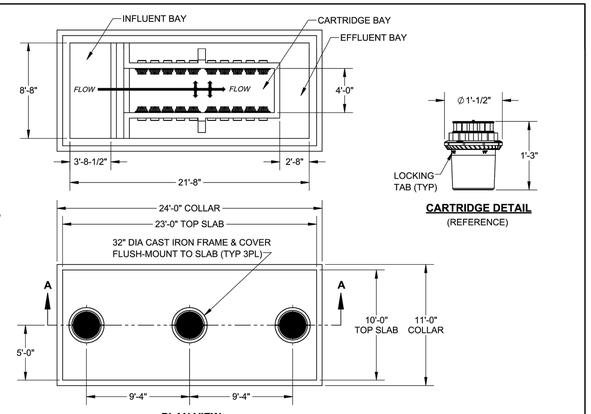
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NOTES (REF):
1.0 WEIGHT ESTIMATE:
1.1 COVER/SLAB: 26,100 LB (13 TONS)
1.2 BASE W/ FILTERS: 94,000 LB (47 TONS)
2.0 MATERIALS MEET OR EXCEEDS REQUIREMENTS:
2.1 VAULT:
2.1.1 REINFORCEMENT STEEL: REBAR, ASTM A-615 GRADE 60
2.1.2 CEMENT: ASTM C-150 SPECIFICATIONS, CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI (MIN)
2.2 ACCESS MANHOLES: ASTM-A-48, CLASS 35B GRAY IRON OR ASTM A536, GRADE 80-55-06 DUCTILE IRON.
3.0 CONCRETE STRUCTURE DESIGN LOADINGS:
3.1 AASHTO HS-20 LOAD RATING.
3.2 SOIL WEIGHT = 120 PCF
3.3 DEPTH OF OVERBURDEN: <8-FT
3.4 EQUIVALENT FLUID PRESSURE = 40 PCF
3.5 LATERAL LIVE LOAD SURCHARGE PER SPECS.
4.0 PERFORMANCE CHARACTERISTICS (W/ FABCO HYDROCARBON CARTRIDGE):
4.1 MAXIMUM CARTRIDGE CAPACITY = 40
4.2 MAXIMUM TREATMENT CAPACITY = 10.0 CFS (4,500 GPM)
4.3 BYPASS CAPACITY 24.0 CFS (10,800 GPM)
5.0 EAST JORDAN IRON WORKS (EJIW) UTILITY CONSTRUCTION CASTINGS ARE RATED FOR REPEATED VEHICULAR TRAFFIC AND CONFORM TO AASHTO M306 STANDARDS. FINAL MANHOLE OR ACCESS HATCH INSTALLATION, AND ADJUSTMENT TO GRADE, SHALL BE PERFORMED BY QUALIFIED PERSONNEL.
6.0 OFF-LOADING, SETTING, EXCAVATION, DEWATERING, DRAINAGE, AND BACK FILL OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND LOCAL REGULATIONS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUB-BASE AND BACKFILL DEPTH ARE SITE SPECIFIC AND SHALL BE SPECIFIED BY THE ENGINEER OF RECORD.
7.0 THE CONTRACTOR SHALL VERIFY THAT THE UNIT IS VERTICALLY AND HORIZONTALLY PLUMB AND STABLE, WITH MINIMUM VOIDS AND MINIMUM UN-COMPACTED SOIL AFTER BACK FILL OPERATION.
8.0 CONNECT AND SEAL DRAIN LINES TO THE STORMSAFE INLET AND OUTLET PORTS AND IF NECESSARY GROUT WITH APPROVED NON-SHRINKING GROUT-FILL IN ACCORDANCE WITH GROUT MANUFACTURERS INSTRUCTIONS. ALL GROUT-FILL MATERIALS SHALL BE SUPPLIED BY THE CONTRACTOR. THE STORMSAFE "INLET" AND "OUTLET" PORTS ARE CLEARLY LABELED WITH BLACK PAINT. INLET AND OUTLET DRAIN LINES ARE TO BE ALIGNED FLUSH WITH RESPECT TO THE INTERIOR VAULT WALLS.
9.0 MAINTENANCE AND CARTRIDGE FILTER REPLACEMENT INSTRUCTIONS ARE PROVIDED SEPARATELY BY FABCO AND ARE TYPICALLY SITE SPECIFIC.
10.0 CARTRIDGE FILTER REPLACEMENT (IN GENERAL):
FOR BEST PERFORMANCE REPLACE CARTRIDGE FILTERS IAW FABCO RECOMMENDATIONS. HIGH CONTAMINANT LOCATIONS MAY REQUIRE MORE FREQUENT CARTRIDGE REPLACEMENT. REMOVE ANY DEBRIS OR HEAVY SEDIMENT FROM THE INFLUENT AND EFFLUENT CHAMBERS. ENTER THE STORMSAFE CARTRIDGE CHAMBER IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS FOR ENCLOSED SPACE ENTRY. REMOVE EACH CARTRIDGE BY ROTATING 30-DEG IN THE CLOCKWISE DIRECTION AND LIFTING. LIKEWISE, INSTALL THE NEW CARTRIDGE AND LOCK IN PLACE BY ROTATING 30-DEGREES IN THE COUNTER CLOCKWISE DIRECTION. DISPOSE OF USED FILTER CARTRIDGES PER LOCAL REGULATIONS.



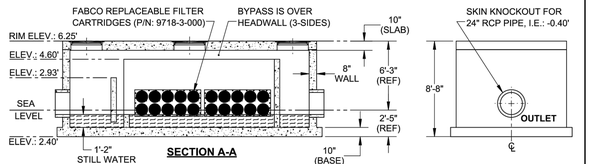
REFERENCE VIEW
(TOP SLAB AND CASTING NOT SHOWN)





PLAN VIEW

CARTRIDGE DETAIL
(REFERENCE)



SECTION A-A

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	APPROVAL	DATE
DWN	J.P.	4/30/2024
CHKD		
ENGR	J.P.	4/30/2024
MFG		

PROJECT: OPA-LOCKA, FL.
MATERIAL:

FABCO INDUSTRIES, INC.
24 CENTRAL DRIVE
FARMINGDALE, NY 11735
WWW.FABCO-INDUSTRIES.COM

fabco INDUSTRIES

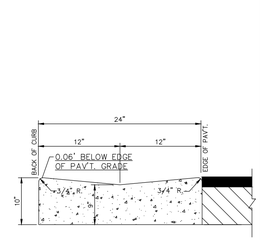
TITLE: STORMSAFE, 40 CARTRIDGE

SIZE	STORMSAFE NO.	REV
B	SSV40-2-000	B

SCALE: NONE SHEET 1 OF 1

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE. ON 09/20/2024.

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CONCRETE VALLEY GUTTER
SCALE: N.T.S.

CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

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ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

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REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA- TASK 4 – STANDARD DETAILS – ROADWAY AND STORMDWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-26
DRAWING No. 31 OF 43

A. DEMOLITION NOTES

1. THE CONTRACTOR IS ENCOURAGED TO THOROUGHLY INSPECT THE SITE AS WELL AS REVIEW THE PLANS AND SPECIFICATIONS PRIOR TO SUBMITTING PRICING. CONTRACTOR WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR INCIDENTAL ITEMS NOT SHOWN ON THIS DEMOLITION PLAN.
2. THE DEMOLITION PLAN IS BASED ON AVAILABLE UTILITY INFORMATION AND MAY OR MAY NOT BE ALL INCLUSIVE FOR THIS SITE. ANY UTILITIES ENCOUNTERED DURING DEMOLITION THAT ARE NOT DEPICTED/ADDRESSED ON THIS DRAWING SHOULD BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER IMMEDIATELY.
3. CONTRACTOR IS REQUIRED TO OBTAIN ALL DEMOLITION PERMITS.
4. ALL FEATURES IDENTIFIED ON THIS PLAN WHICH ARE LISTED TO BE DEMOLISHED ARE TO BE REMOVED FROM THE SITE. AFTER DEMOLITION IS COMPLETE THE SITE SHALL BE DELIVERED IN A CONDITION SUITABLE FOR DEVELOPMENT.
5. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING AIRBORNE DUST AND POLLUTANTS BY USING WATER SPRINKLING OR OTHER SUITABLE MEANS OF CONTROL.
6. CONTRACTOR TO USE CARE IN HANDLING DEBRIS FROM THE SITE TO ENSURE THE SAFETY OF THE PUBLIC. HAUL ROUTE TO BE CLOSELY MONITORED FOR DEBRIS OR MATERIALS TRACKED ONTO ADJOINING ROADWAYS, SIDEWALKS, ETC. ROADWAYS AND WALKWAYS TO BE CLEARED DAILY OR AS NECESSARY TO MAINTAIN PUBLIC SAFETY.
7. ALL ASPHALT TO BE REMOVED SHALL BE SAW CUT ADJACENT TO REMAINING IMPROVEMENTS.
8. SEE EROSION CONTROL PLAN FOR INLET PROTECTION AND EROSION AND SEDIMENTATION CONTROL MEASURES.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES WHILE PERFORMING ALL DEMOLITION WORK.

B. BEST MANAGEMENT PRACTICES (BMPS)

1. THIS PLAN HAS BEEN PREPARED TO ENSURE COMPLIANCE WITH APPROPRIATE CONDITIONS OF THE MIAMI-DADE COUNTY LAND DEVELOPMENT REGULATIONS, THE RULES OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP), CHAPTER 17-25, F.A.C., THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD), CHAPTER 400-4, F.A.C. AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) DOCUMENT NO. EPA 832/R-92-005 (SEPTEMBER 1992). THE PLAN ADDRESSES THE FOLLOWING:

   a. PREVENT LOSS OF SOIL DURING CONSTRUCTION BY STORMWATER RUNOFF AND/OR WIND EROSION, INCLUDING PROTECTING TOPSOIL BY STOCKPILING FOR REUSE.
   b. SEDIMENTATION PROTECTION OF CANAL.
   c. PREVENT POLLUTING THE AIR WITH DUST AND PARTICULATE MATTER. THE VARIOUS TECHNIQUES OR ACTIONS IDENTIFIED UNDER EACH SECTION INDICATE THE APPROPRIATE SITUATION WHEN THE TECHNIQUES SHOULD BE EMPLOYED. ALSO IDENTIFIED IS A CROSS-REFERENCE TO A DIAGRAM OR FIGURE REPRESENTING THE TECHNIQUE. IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP'S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS SPECIFIED IN ACCORDANCE WITH THE CURRENT FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS. CONTRACTOR SHALL PREPARE REQUIRED NPDES DOCUMENTATION AND OBTAIN PERMIT PRIOR TO COMMENCEMENT OF CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE THE REQUIRED NPDES DOCUMENT AND OBTAIN THE NPDES PERMIT. ALL COST ASSOCIATED WITH SUCH WORK SHALL BE DEEMED INCIDENTAL TO THE PROJECT LUMP SUM COST.

C. GENERAL EROSION CONTROL NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THESE EROSION CONTROL DRAWINGS, THE STANDARD DETAILS, THE NPDES PERMIT (TO BE OBTAINED BY CONTRACTOR) AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THIS DRAWING AND THE STATE OF FLORIDA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. CONTRACTOR SHALL OBTAIN ANY NECESSARY DEWATERING PERMITS AS SITE CONDITIONS AND CONSTRUCTION ACTIVITIES REQUIRE.
4. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMP) IN ALL CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   A. FUEL SPILLS AND LEAKS PREVENTION
   B. PREVENT/REDUCE VEHICLE AND EQUIPTMENT WASHING AND STEAM CLEANING
   C. VEHICLE AND EQUIPTMENT MAINTENANCE AND REPAIR
   D. PROPER OUTDOOR LOADING/UNLOADING OF MATERIALS
   E. PREVENT/REDUCE OUTDOOR STORAGE OF RAW MATERIALS, PRODUCTS, AND BY-PRODUCTS
   F. SOLID WASTE MANAGEMENT
   G. HAZARDOUS WASTE MANAGEMENT
   H. CONCRETE WASTE MANAGEMENT
   I. SANDBLASTING WASTE MANAGEMENT
   J. STRUCTURE CONSTRUCTION AND PAINTING
   K. SPILL PREVENTION AND CONTROL
   L. CONTAMINATED SOIL MANAGEMENT
   M. SANITARY/SEPTIC WASTE MANAGEMENT
   N. SOIL EROSION CONTROL
   O. STORM WATER TURBIDITY MANAGEMENT

5. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
6. BEST MANAGEMENT PRACTICES (BMPS) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
7. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS. CONTRACTOR MUST MAINTAIN ALL PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS ON SITE AT ALL TIMES.
8. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
9. CONTRACTOR SHALL BEGIN CLEARING AND GRUBBING THOSE PORTIONS OF THE SITE NECESSARY TO IMPLEMENT PERIMETER CONTROL MEASURES. CLEARING AND GRUBBING FOR THE REMAINING PORTIONS OF THE PROPOSED SITE SHALL COMMENCE ONCE PERIMETER CONTROLS ARE IN PLACE. PERIMETER CONTROLS SHALL BE ACTIVELY MAINTAINED UNTIL SAID AREAS HAVE BEEN STABILIZED AND SHALL BE REMOVED ONCE FINAL STABILIZATION IS COMPLETE.
10. GENERAL EROSION CONTROL BMPS SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND POTENTIAL CANAL EMBANKMENT CAVE-INS. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED AS SOON AS POSSIBLE DURING CONSTRUCTION.
11. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
12. SURFACE WATER QUALITY SHALL BE MAINTAINED BY EMPLOYING THE FOLLOWING BMP'S IN THE CONSTRUCTION PLANNING AND CONSTRUCTION OF ALL IMPROVEMENTS.
13. IT SHOULD BE NOTED THAT THE MEASURE IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP(S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS NECESSARY TO CONFORM TO CURRENT CITY, FDEP AND SFWMD CODES AND SPECIFICATIONS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION ACTIVITIES.

D. STORM WATER EROSION CONTROL PRACTICES

1. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT FROM DETENTION PONDS AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
2. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
3. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (COMPOST SOCK DEVICES, ETC.) TO PREVENT EROSION.
4. WHERE PRACTICAL, STORMWATER SHALL BE CONVEYED BY SWALES.
5. EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THEY SHALL BE EMPLOYED AS NECESSARY IN ACCORDANCE WITH THE FOLLOWING:
   A. IN GENERAL, EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.
   B. STORMWATER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. PROTECTION MEASURES SHALL BE EMPLOYED AS SOON AS PRACTICAL DURING THE VARIOUS STAGES OF INLET CONSTRUCTION. SILT BARRIERS SHALL REMAIN IN PLACE UNTIL SODDING AROUND INLETS IS COMPLETE.
   C. WHEN NEEDED A TEMPORARY SEDIMENT TRAP SHOLD BE CONSTRUCTED TO DETAIN SEDIMENT-LADEN RUNOFF FROM DISTURBED AREAS.
6. SILT BARRIERS, ANY SILT WHICH ACCUMULATES BEHIND THE BARRIERS, AND ANY FILL USED TO ANCHOR THE BARRIERS SHALL BE REMOVED PROMPTLY AFTER THE END OF THE MAINTENANCE PERIOD SPECIFIED FOR THE BARRIERS.
7. SLOPES OF BANKS OF RETENTION/DETENTION PONDS SHALL BE CONSTRUCTED NOT STEEPER THAN 3H:1V FROM TOP OF BANK TO TWO FEET BELOW NORMAL WATER LEVEL, AS APPLICABLE.
8. SOD SHALL BE PLACED FOR A 2-FOOT WIDE STRIP ADJOINING ALL CURBING AND AROUND ALL INLETS. SOD SHALL BE PLACED BEFORE SILT BARRIERS ARE REMOVED.
9. WHERE REQUIRED TO PREVENT EROSION FROM SHEET FLOW ACROSS BARE GROUND FROM ENTERING A LAKE OR SWALE, A TEMPORARY SEDIMENT SUMP SHALL BE CONSTRUCTED.
10. FILTER FABRIC SHOULD BE USED FOR STORM DRAIN INLET PROTECTION BEFORE FINAL STABILIZATION.
11. FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND INSTALLATION OF DRAINAGE OUTFALL PIPE AND ENDWALL.
12. EXISTING DRAINAGE FLOW PATTERNS AND POSITIVE DRAINAGE TO EXISTING OUTFALLS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
13. ALL NEW INLETS INSTALLED UNDER THIS PROJECT SHALL RECEIVE IN LET PROTECTION

E. WIND EROSION CONTROL PRACTICES

1. WIND EROSION SHALL BE CONTROLLED BY EMPLOYING THE FOLLOWING METHODS AS NECESSARY AND APPROPRIATE:
   A. BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IT MAY BE NECESSARY TO LIMIT CONSTRUCTION VEHICLE SPEED IF BARE EARTH HAS NOT BEEN EFFECTIVELY WATERED. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.
   B. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HASPERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED (SEE PERMANENT STABALIZATION PRACTICES FOR DETAILS). THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE GRADING PLAN AND/OR LANDSCAPE PLAN. CLEARED SITE DEVELOPMENT AREAS NOT CONTINUALLY SCHEDULED FOR CONSTRUCTION ACTIVITIES SHALL BE COVERED WITH HAY OR OVERSEEDED AND PERIODICALLY WATERED SUFFICIENTLY TO STABILIZE THE TEMPORARY GROUNDCOVER (SEE TEMPORARY STABALIZATION PRACTICES FOR DETAILS).
   C. AT ANY TIME BOTH DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS SHOULD INCLUDE ERECTION OF DUST CONTROL FENCES. A 6-FT GEOTEXTILE FILTER FIBER SHOULD BE HANGING AGAINST THE EXISTING CHAIN LINK FENCE AND GATE.
2. ALL DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

F. STABILIZATION PRACTICES

1. SHALL BE IN ACCORDANCE WITH DEP DOCUMENT NO 62-621.300(4)(A).
2. DISTURBED PORTIONS OF SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASE FOR AT LEAST 21 DAYS, SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA.
3. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY PERMANENTLY CEASE SHALL BE STABILIZED WITH SOD NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY.

G. STRUCTURAL PRACTICES

1. SHALL BE IN ACCORDANCE WITH DEP DOCUMENT NO 62-621.300(4)(A)

H. WASTE DISPOSAL

1. WASTE MATERIALS -- ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER WITH A SECURE LID IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITIES TO HAVE THE DUMPSTER EMPTIED AT LEAST TWICE A WEEK AND THE WASTE TAKEN TO AN APPROPRIATE LANDFILL. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE SUPERINTENDENT SHALL ORGANIZE TRAINING FOR THE EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH WASTE MATERIALS. THE SUPERINTENDENT SHALL BE RESPONSIBLE FOR POSTING AND ENFORCING WASTE MATERIAL PROCEDURES.
2. HAZARDOUS WASTE -- HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS OR AS DIRECTED BY THE MANUFACTURER. THE SUPERINTENDENT SHALL ORGANIZE THE PROPER TRAINING FOR EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH HAZARDOUS WASTE MATERIALS. THESE PROCEDURES SHALL BE POSTED ON THE SITE. THE PERSON WHO MANAGES THE SITE SHALL BE RESPONSIBLE FOR ENFORCING THE PROCEDURES.
3. SANITARY WASTE -- SANITARY WASTE SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITY FOR COLLECTION OF THE SANITARY WASTE AT LEAST THREE TIMES A WEEK TO PREVENT SPILLAGE ONTO THE SITE.
4. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

I. OFFSITE TRACKING

1. STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE SEDIMENT TRACKING OFFSITE. THE MAJOR ROAD CONNECTED TO THE PROJECT SHALL BE CLEANED ONCE A DAY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK RESULTING FROM CONSTRUCTION TRAFFIC. ALL TRUCKS HAULING MATERIALS OFFSITE SHALL BE COVERED WITH A TARPAULIN.
2. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATION PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES. HEAVY CONSTRUCTION EQUIPMENT PARKING AND MAINTENANCE AREAS SHALL BE DESIGNED TO PREVENT OIL, GREASE, AND LUBRICANTS FROM ENTERING SITE DRAINAGE FEATURES INCLUDING STORMWATER COLLECTION AND TREATMENT SYSTEMS. CONTRACTORS SHALL PROVIDE BROAD DIKES, HAY BALES OR SILT SCREENS AROUND, AND SEDIMENT SUMPS WITHIN, SUCH AREAS AS REQUIRED TO CONTAIN SPILLS OF OIL, GREASE OR LUBRICANTS. CONTRACTORS SHALL HAVE AVAILABLE, AND SHALL USE, ABSORBENT FILTER PADS TO CLEAN UP SPILLS AS SOON AS POSSIBLE AFTER OCCURRENCE.
3. ALL WASH WATER FROM CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC. SHALL BE DETAINED ON SITE AND SHALL BE PROPERLY TREATED OR DISPOSED.
4. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
5. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

F. MAINTENANCE

1. ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

   A. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.
   B. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
   C. THE COMPOST ROCK FILTRATION DEVICE SHALL BE INSPECTED PERIODICALLY FOR HEIGHT OF SEDIMENT AND CONDITION OF DEVICE. COMPOST SOCK SHALL BE REPAIRED TO ITS ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE COMPOST SOCK WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE COMPOST SOCK.
   D. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
   E. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
   F. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. THE SEDIMENT BASINS/DITCHES SHALL BE CHECKED MONTHLY FOR DEPTH OF SEDIMENT. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 10% AND AFTER CONSTRUCTION IS COMPLETE.
   G. ALL MAINTENANCE OPERATIONS SHALL BE DONE IN A TIMELY MANNER BUT IN NO CASE LATER THAN SEVEN CALENDAR DAYS FOLLOWING THE INSPECTION.DIVERSION DIKES SHALL BE INSPECTED MONTHLY. ANY BREACHES SHALL BE PROMPTLY REPAIRED.
   H. A MAINTENANCE REPORT SHALL BE COMPLETED DAILY AFTER EACH INSPECTION OF THE SEDIMENT AND EROSION CONTROL METHODS. THE REPORTS SHALL BE FILED IN AN ORGANIZED MANNER AND RETAINED ON-SITE DURING CONSTRUCTION. AFTER CONSTRUCTION IS COMPLETED, THE REPORTS SHALL BE SAVED FOR AT LEAST THREE YEARS. THE REPORTS SHALL BE AVAILABLE FOR ANY AGENCY THAT HAS JURISDICTION OVER EROSION CONTROL.
   I. ALL REPAIRS MUST BE MADE WITHIN 24 HOURS OF REPORT.
   J. THE SUPERINTENDENT SHALL ORGANIZE THE TRAINING FOR INSPECTION PROCEDURES AND PROPER EROSION CONTROL METHODS FOR EMPLOYEES THAT COMPLETE INSPECTIONS AND REPORTS.
   K. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

2. THE EROSION CONTROL FEATURES INSTALLED BY THE CONTRACTOR SHALL BE ACCEPTABLY MAINTAINED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

G. SPILL PREVENTION AND CONTROL

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

1. GOOD HOUSEKEEPING

   A. SUPERINTENDENT SHALL INSPECT PROJECT AREA DAILY FOR PROPER STORAGE, USE, AND DISPOSAL OF CONSTRUCTION MATERIALS.
   B. STORE ONLY ENOUGH MATERIAL ON SITE FOR PROJECT COMPLETION.
   C. ALL SUBSTANCES SHOULD BE USED BEFORE DISPOSAL OF CONTAINER.
   D. ALL CONSTRUCTION MATERIALS STORED SHALL BE ORGANIZED AND IN THE PROPER CONTAINER AND IF POSSIBLE, STORED UNDER A ROOF OR PROTECTIVE COVER.
   E. PRODUCTS SHALL NOT BE MIXED UNLESS DIRECTED BY THE MANUFACTURER. 1. ALL PRODUCTS SHALL BE USED AND DISPOSED OF ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
   F. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

2. HAZARDOUS PRODUCTS

   A. MATERIALS SHOULD BE KEPT IN ORIGINAL CONTAINER WITH LABELS UNLESS THE ORIGINAL CONTAINERS CANNOT BE RESEALED. IF ORIGINAL CONTAINERS CANNOT BE USED, LABELS AND PRODUCT INFORMATION SHALL BE SAVED.
   B. PROPER DISPOSAL PRACTICES SHALL ALWAYS BE FOLLOWED IN ACCORDANCE WITH MANUFACTURER AND LOCAL/STATE REGULATIONS.

3. PRODUCT SPECIFIC PRACTICES

   A. PETROLEUM PRODUCTS MUST BE STORED IN PROPER CONTAINERS AND CLEARLY LABELED. VEHICLES CONTAINING PETROLEUM PRODUCTS SHALL BE PERIODICALLY INSPECTED FOR LEAKS. PRECAUTIONS SHALL BE TAKEN TO AVOID LEAKAGE OF PETROLEUM PRODUCTS ON SITE.
   B. THE MINIMUM AMOUNT OF FERTILIZER SHALL BE USED AND MIXED INTO THE SOIL IN ORDER TO LIMIT EXPOSURE TO STORM WATER. FERTILIZERS SHALL BE STORED IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
   C. PAINT CONTAINERS SHALL BE SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT MUST BE DISPOSED OF IN AN APPROVED MANNER.
   D. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   E. CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

H. SPILL CLEAN UP

1. IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED ABOVE, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   A. SPILL CLEANUP INFORMATION SHALL BE POSTED ON SITE TO INFORM EMPLOYEES ABOUT CLEANUP PROCEDURES AND RESOURCES.
   B. THE FOLLOWING CLEAN-UP EQUIPMENT MUST BE KEPT ON-SITE NEAR THE MATERIAL STORAGE AREA: GLOVES, MOPS, RAGS, BROOMS, DUST PANS, SAND, SAWDUST, LIQUID ABSORBER, GOGGLES, AND TRASH CONTAINERS.
   C. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ONSITE AND READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
   D. ALL SPILLS SHALL BE CLEANED UP AS SOON AS POSSIBLE.
   E. WHEN CLEANING A SPILL, THE AREA SHOULD BE WELL VENTILATED AND THE EMPLOYEE SHALL WEAR PROPER PROTECTIVE COVERING TO PREVENT INJURY.
   F. TOXIC SPILLS MUST BE REPORTED TO THE PROPER AUTHORITY REGARDLESS OF THE SIZE OF THE SPILL.
   G. AFTER A SPILL, THE PREVENTION PLAN SHALL BE REVIEWED AND CHANGED TO PREVENT FURTHER SIMILAR SPILLS FROM OCCURRING. THE CAUSE OF THE SPILL, MEASURES TO PREVENT IT, AND HOW TO CLEAN THE SPILL UP SHALL BE RECORDED.
   H. THE SUPERINTENDENT SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR AND IS RESPONSIBLE FOR THE DAY TO DAY SITE OPERATIONS. THE SUPERINTENDENT ALSO OVERSEES THE SPILL PREVENTION PLAN AND SHALL BE RESPONSIBLE FOR EDUCATING THE EMPLOYEES ABOUT SPILL PREVENTION AND CLEANUP PROCEDURES.

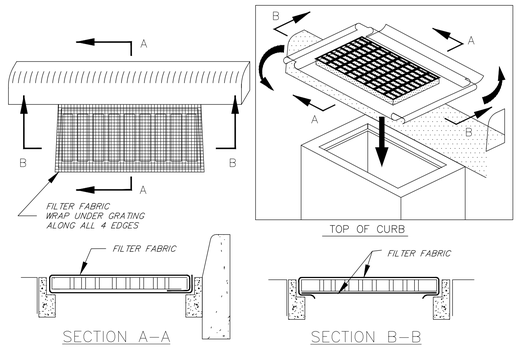
I. SEQUENCE OF CONSTRUCTION

1. UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

   A. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, AND INSTALL INLET PROTECTION, TURBIDITY BARRIERS, AND SILT FENCE
   B. DEMOLISH EXISTING STRUCTURES, (IF APPLICABLE)
   C. INSTALL AND STABILIZE ANY NECESSARY HYDRAULIC CONTROL STRUCTURES (DIKES, CHECK DAMS, OUTLET TRAPS, ETC.)
   D. PERFORM CLEARING AND GRUBBING OF THE SITE, (IF APPLICABLE)
   E. PERFORM MASS GRADING, ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS
   F. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE AS REQUIRED BY GENERIC PERMIT

2. IN THE EVENT OF BMP ISSUES, HALT ALL ACTIVITIES AND CONTACT THE CIVIL ENGINEER CONSULTANT. TO PERFORM INSPECTION AND CERTIFICATION OF BMPS. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH ENGINEER AND ALL GROUND DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

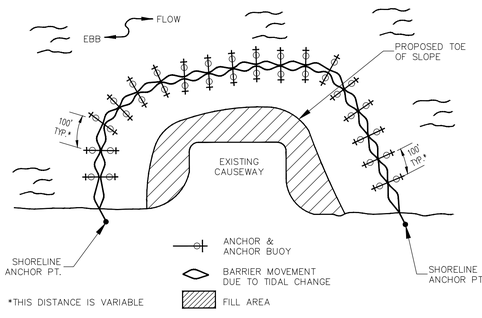
3. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS NECESSARY FOR CONSTRUCTION.



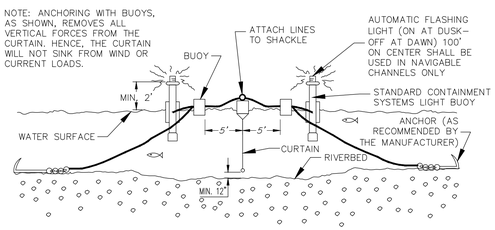
NOTE:

1. CONTRACTOR SHALL PERFORM DAILY INSPECTIONS TO ENSURE GEO-TEXTILE FABRIC IS NOT RIPPED OR BROKEN. CONTRACTOR SHALL INSPECT AFTER RAIN STORM EVENTS.

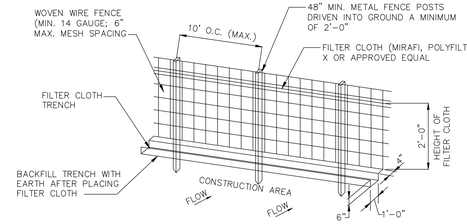
PROPOSED DROP INLET SEDIMENT BARRIER
N.T.S.

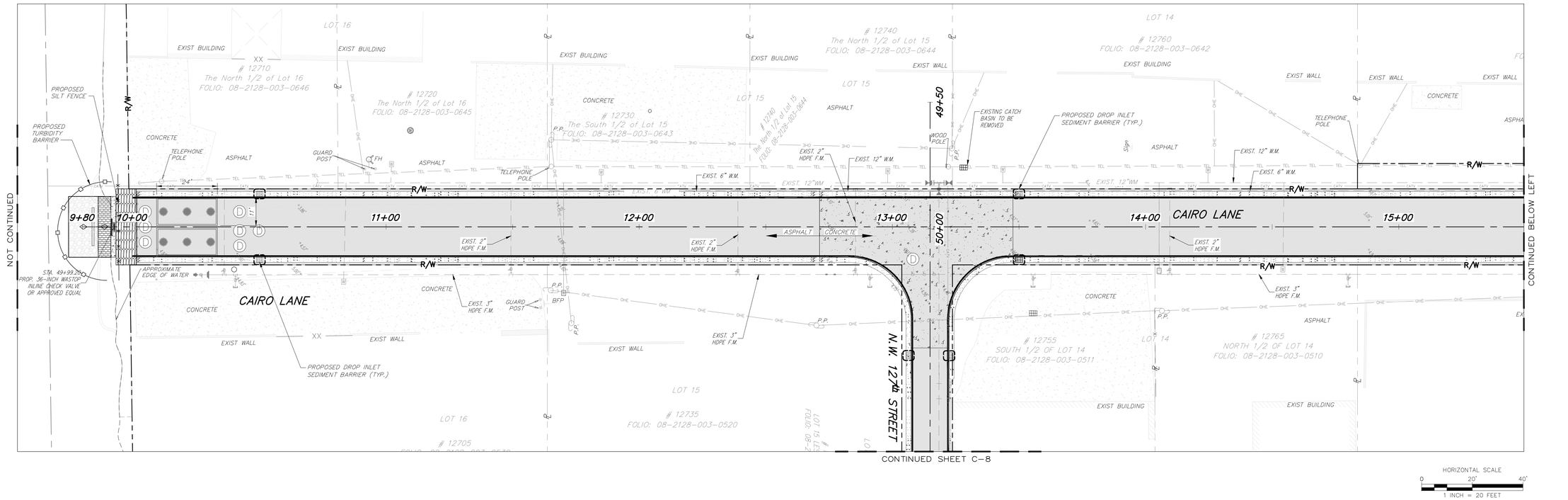


TURBIDITY BARRIER LAYOUT PLAN
N.T.S.

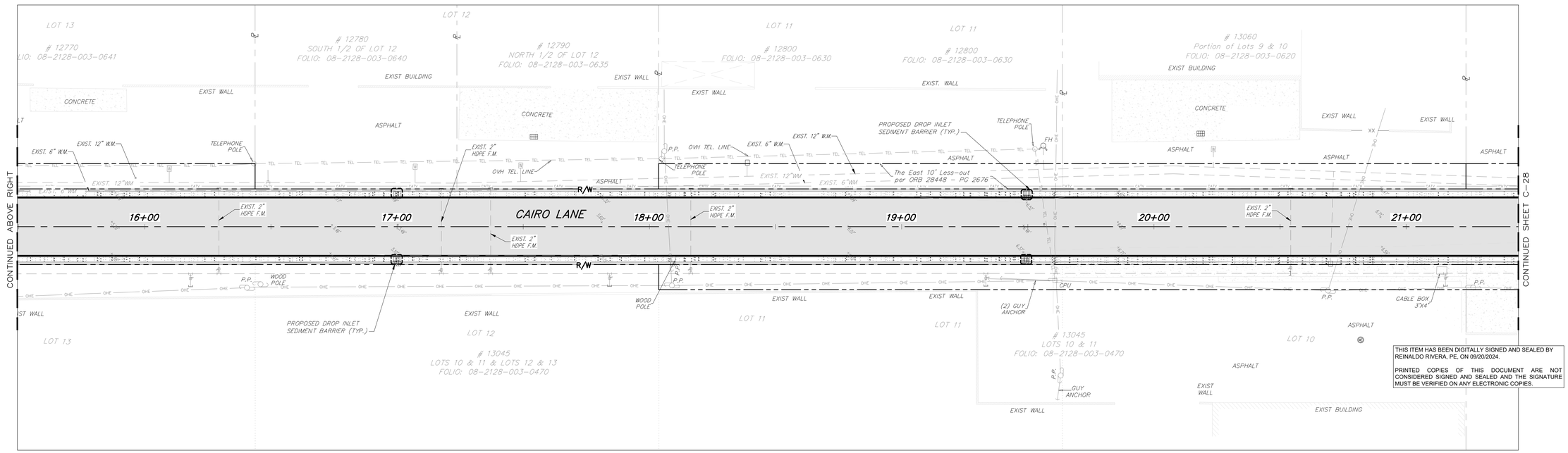


TURBIDITY BARRIER SECTION
N.T.S.


W



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

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CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

STORMWATER POLLUTION PREVENTION PLAN

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	AD
PERMIT SET	X	05/05/23	AD
BID SET	X	09/19/24	AD

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

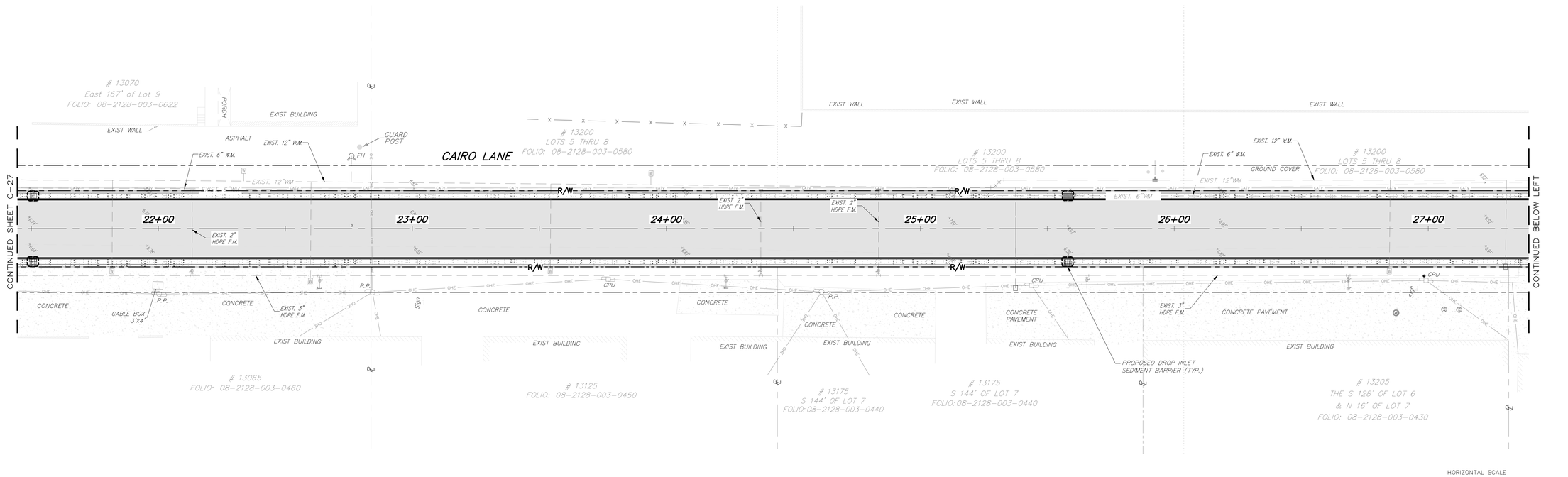
REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

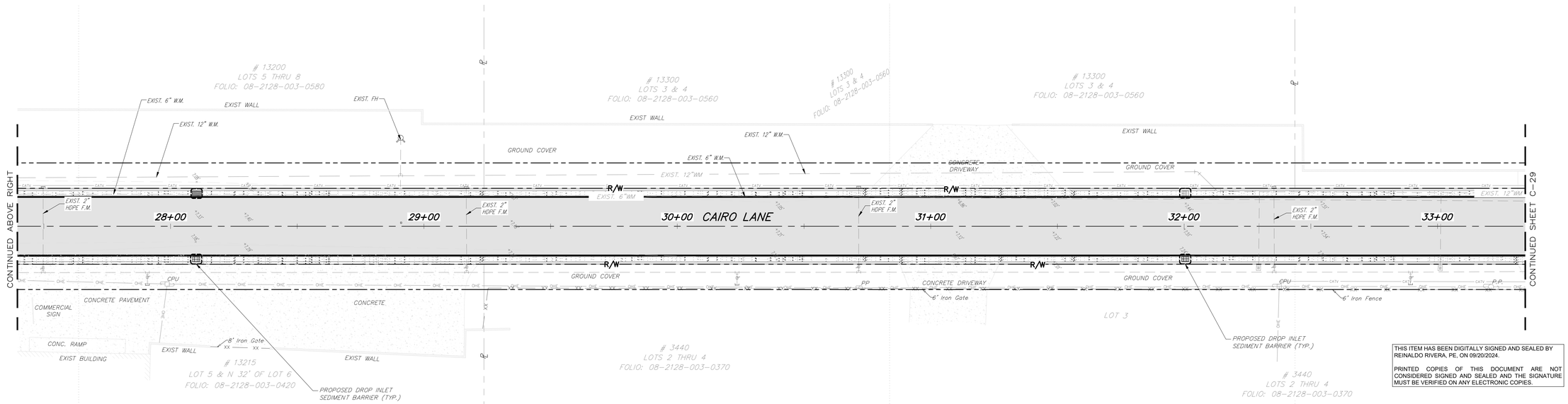
PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 - EROTION CONTROL.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET
C-28

DRAWING No.
33 OF 43



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

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STORMWATER POLLUTION PREVENTION PLAN

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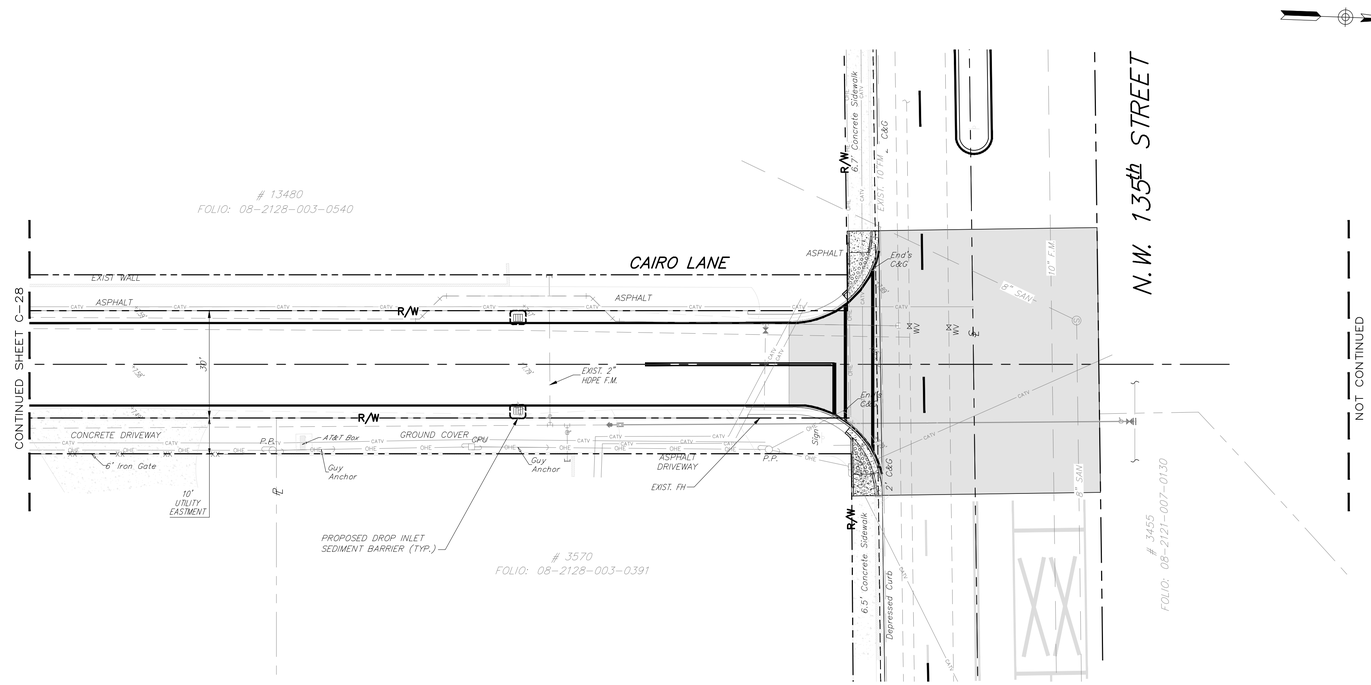
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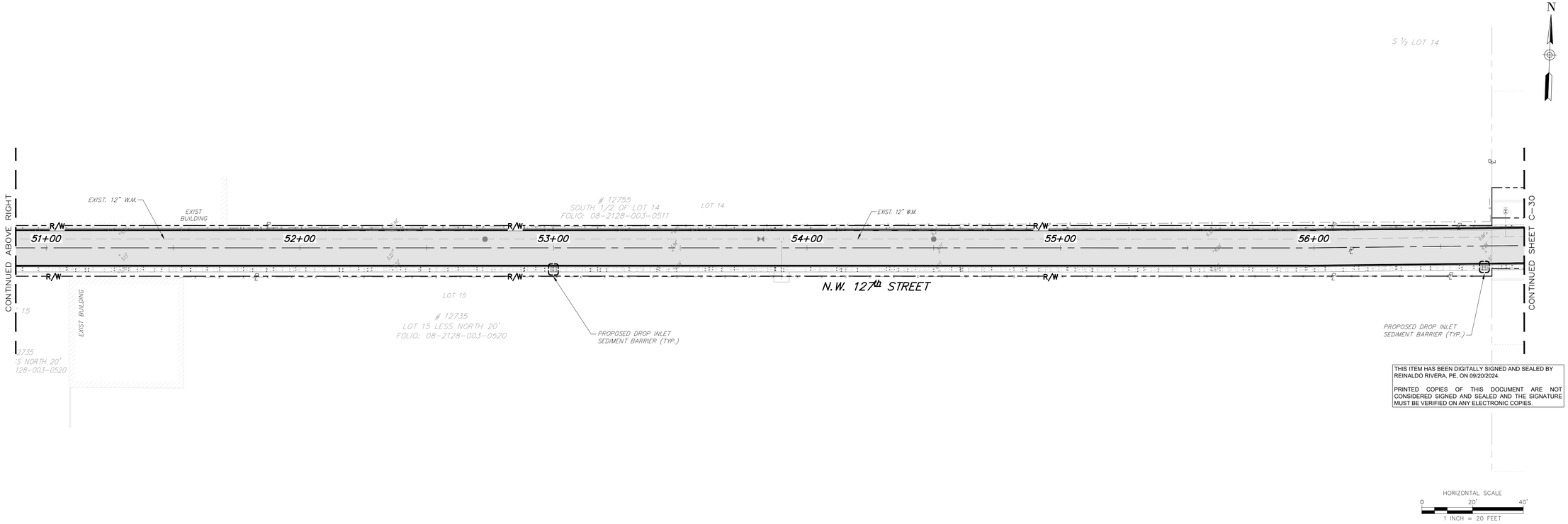
PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK #4 – EROTION CONTROL.DWG
DATE: 9/20/24
SCALE: AS SHOWN

SHEET
C-29

DRAWING No.
34 OF 43



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET



HORIZONTAL SCALE
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1 INCH = 20 FEET

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PROJECT No: 19-00098

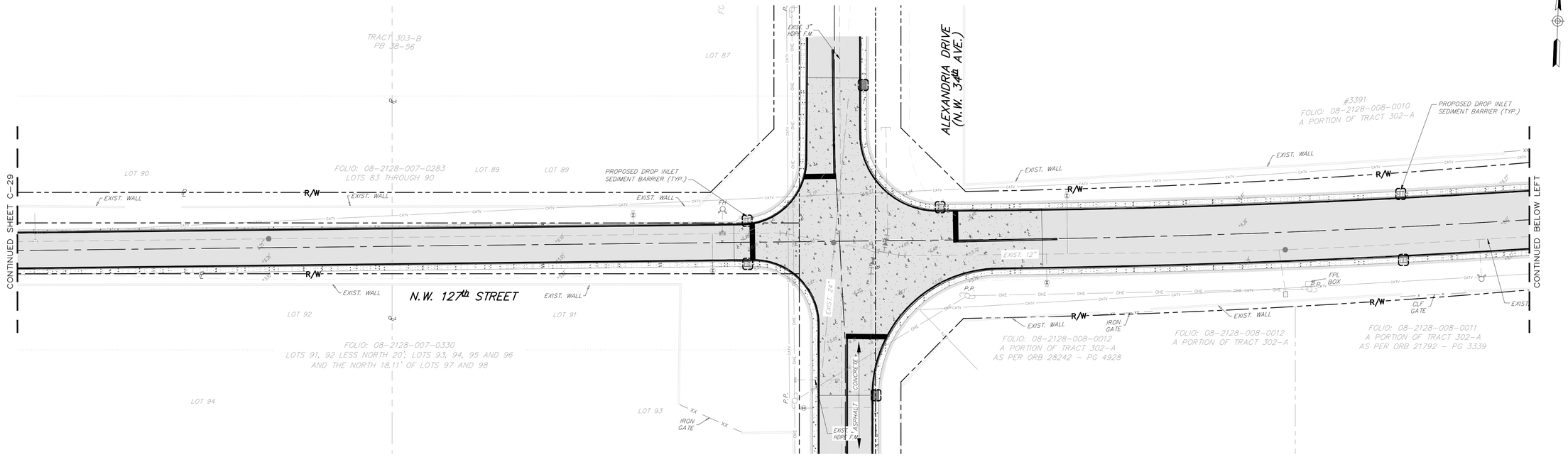
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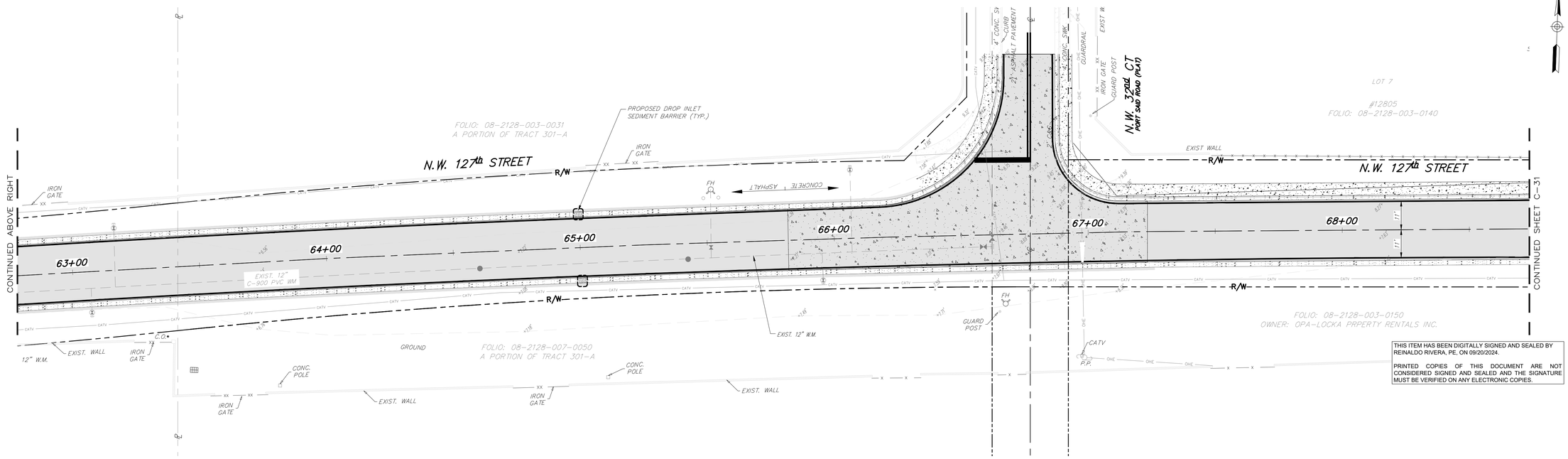
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DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-30

DRAWING No. 35 OF 43





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STORMWATER POLLUTION PREVENTION PLAN

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PROJECT No: 19-00098

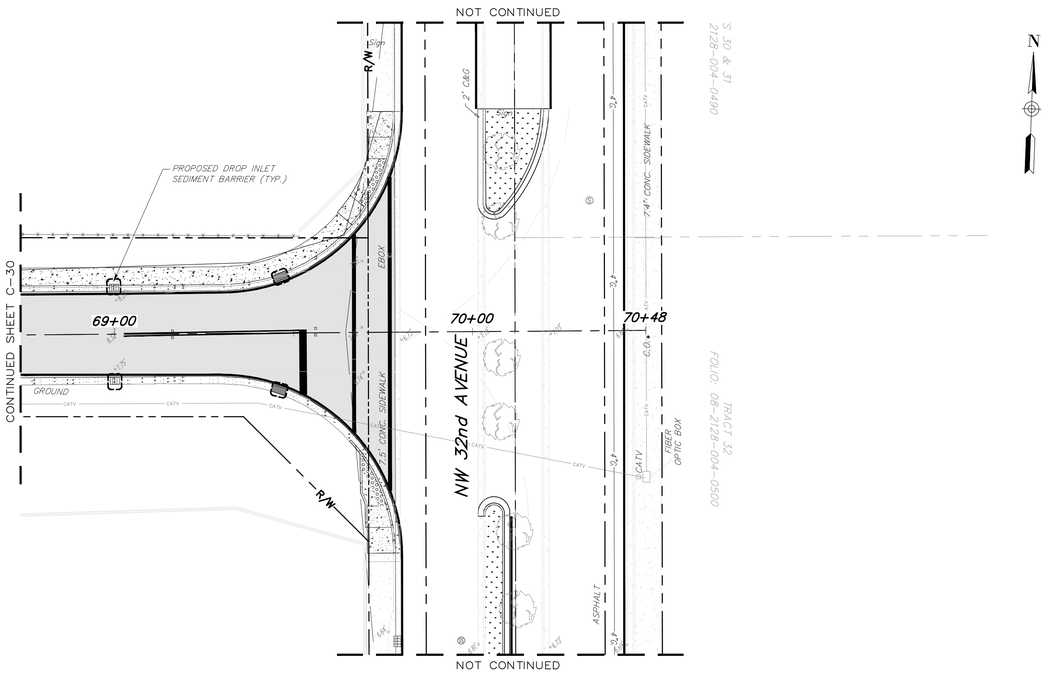
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FILE NAME: OPA-LOCKA-TASK #4 - EROTION CONTROL.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-31

DRAWING No. 36 OF 43



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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

STORMWATER POLLUTION PREVENTION PLAN

DRAWING HISTORY

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REVISIONS

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APPROVALS

CHIEF ENGINEER:

SECTION HEAD:

PROJECT MGR.:

DESIGNED: AD | CHECKED: LJ

DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA
LICENSE
No. 83476
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098

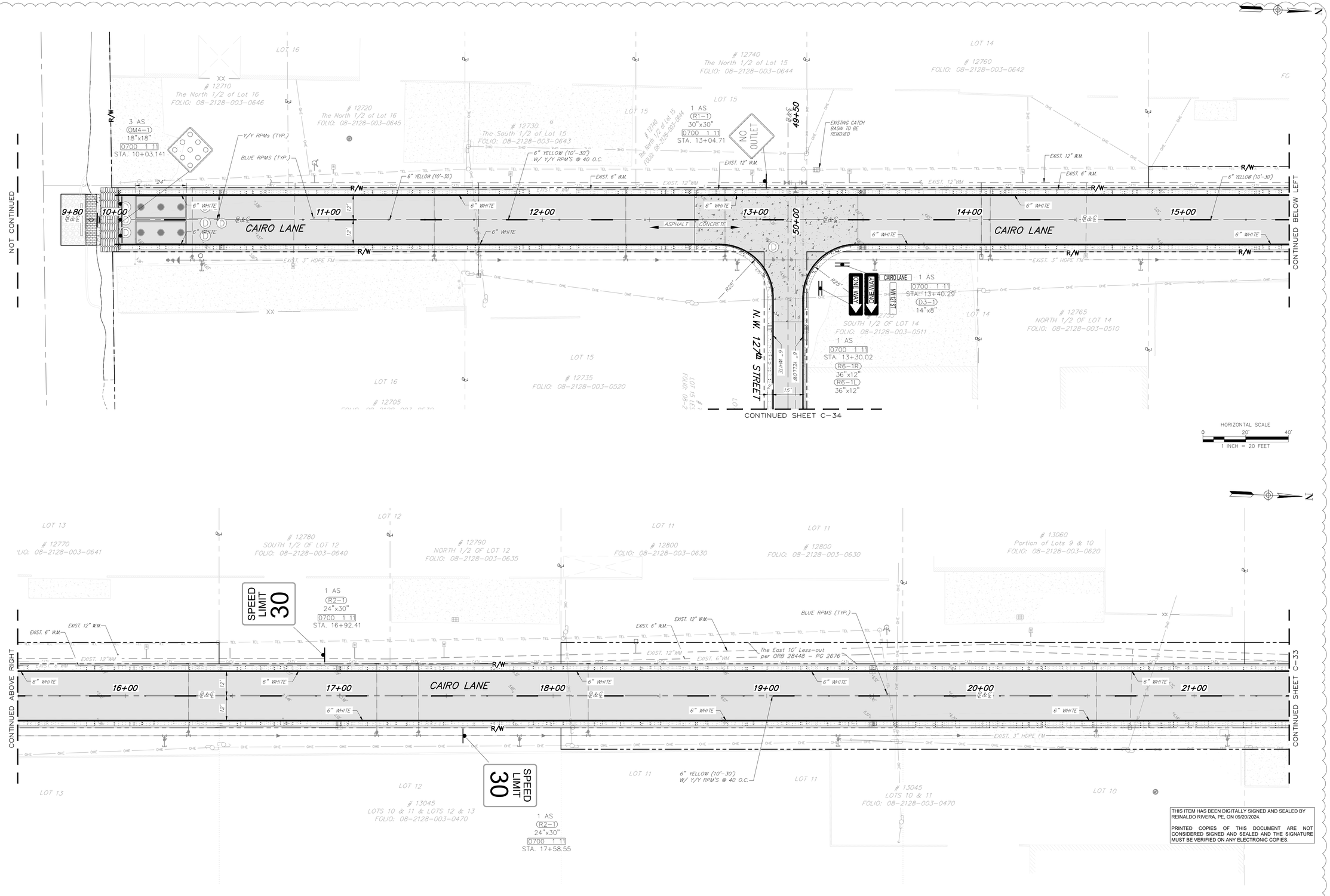
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FILE NAME: OPA-LOCKA-TASK #4 – EROTION CONTROL.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET
C-32

DRAWING No.
37 OF 43



HORIZONTAL SCALE
0 20' 40'
1 INCH = 20 FEET

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NOTE:

1. NW 127TH STREET BETWEEN CAIRO LANE AND NW 32ND AVE TO BE A PUBLIC ROADWAY.

CITY OF OPA-LOCKA FLORIDA

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
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Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

PAVING, MARKING AND SIGNAGE PLANS

DRAWING HISTORY

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APPROVALS

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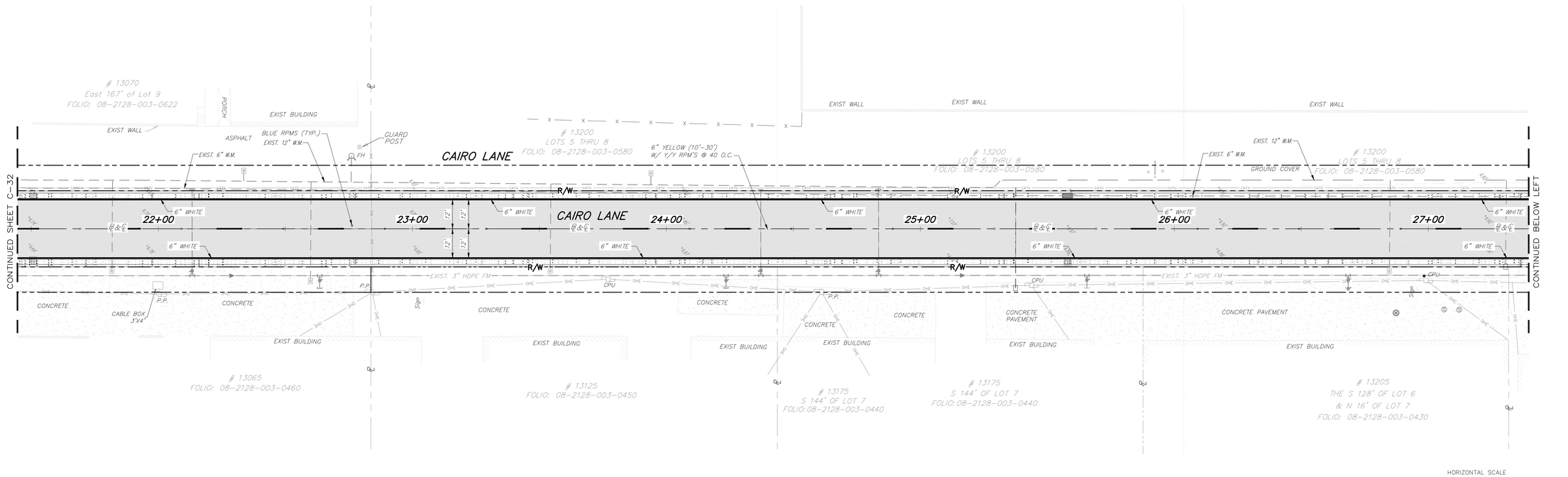
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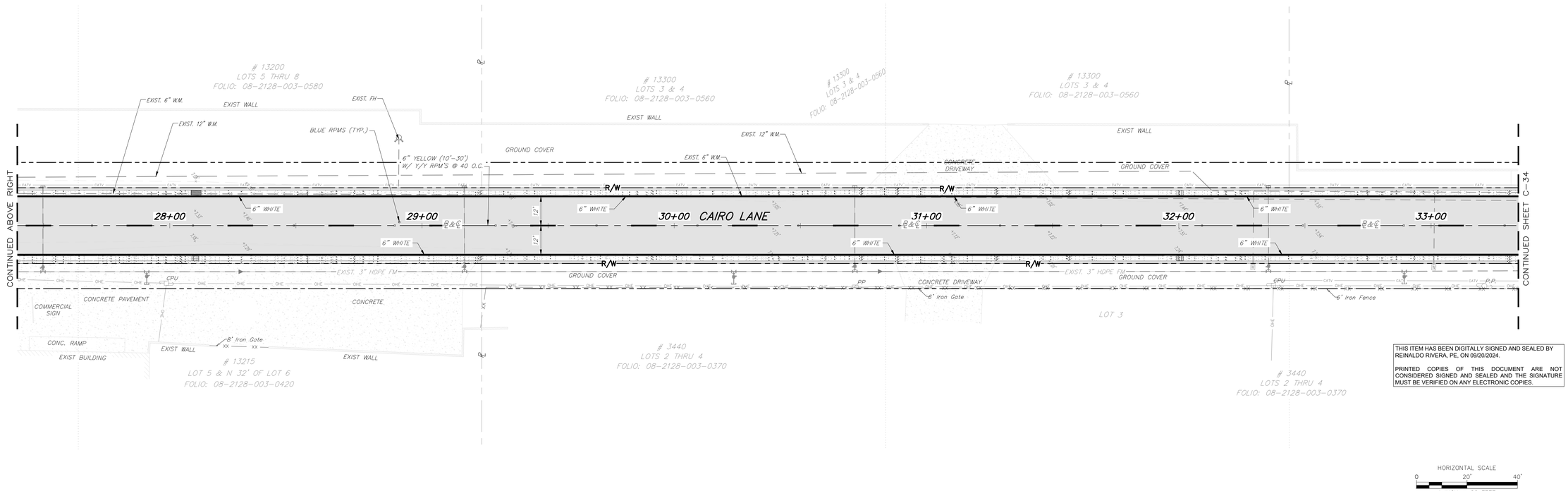
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DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-33

DRAWING No. 38 OF 43





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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM
PAVING, MARKING AND SIGNAGE PLANS

DRAWING HISTORY

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APPROVALS

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SECTION HEAD:

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2222 PONCE DE LEON BLVD, SUITE 300
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PROJECT No: 19-00098

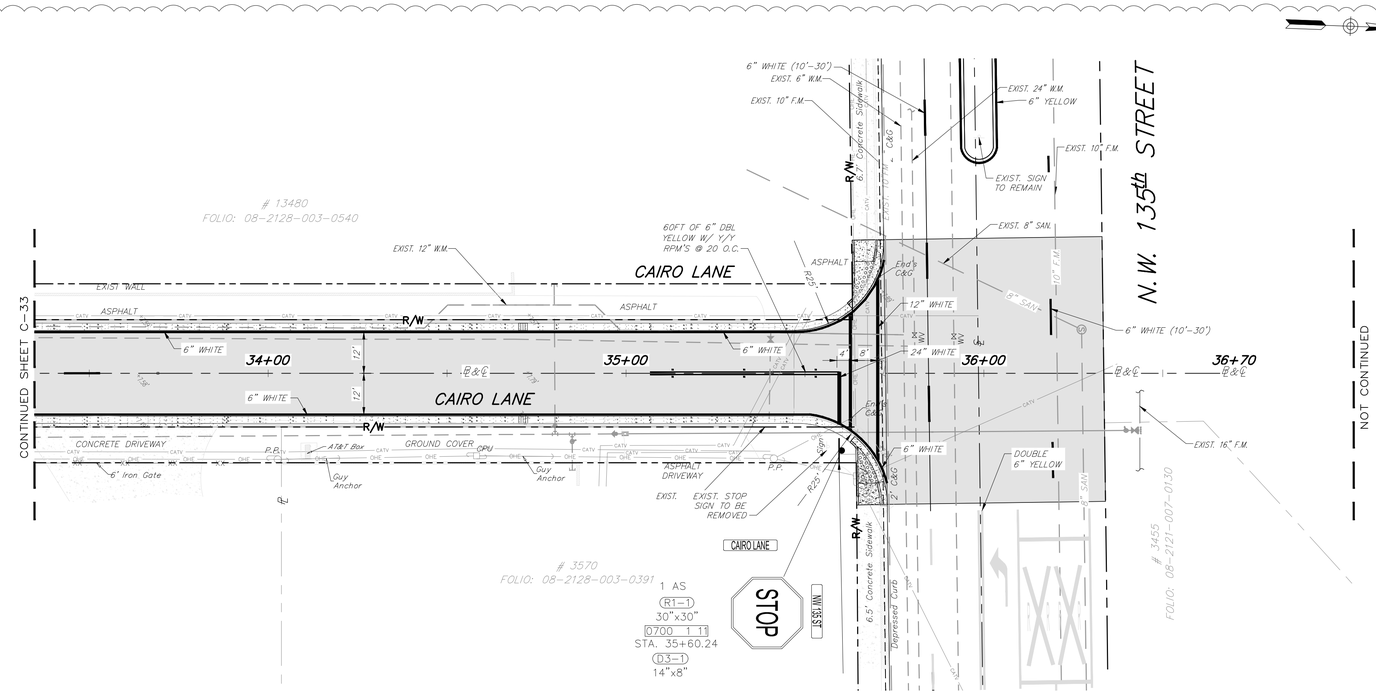
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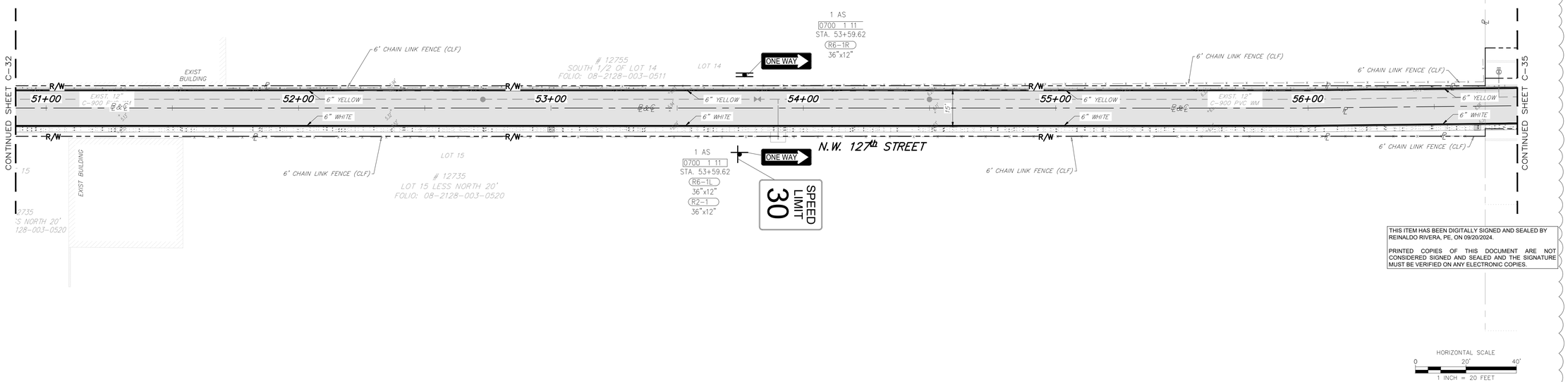
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SHEET C-34

DRAWING No. 39 OF 43





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PAVING, MARKING AND SIGNAGE PLANS

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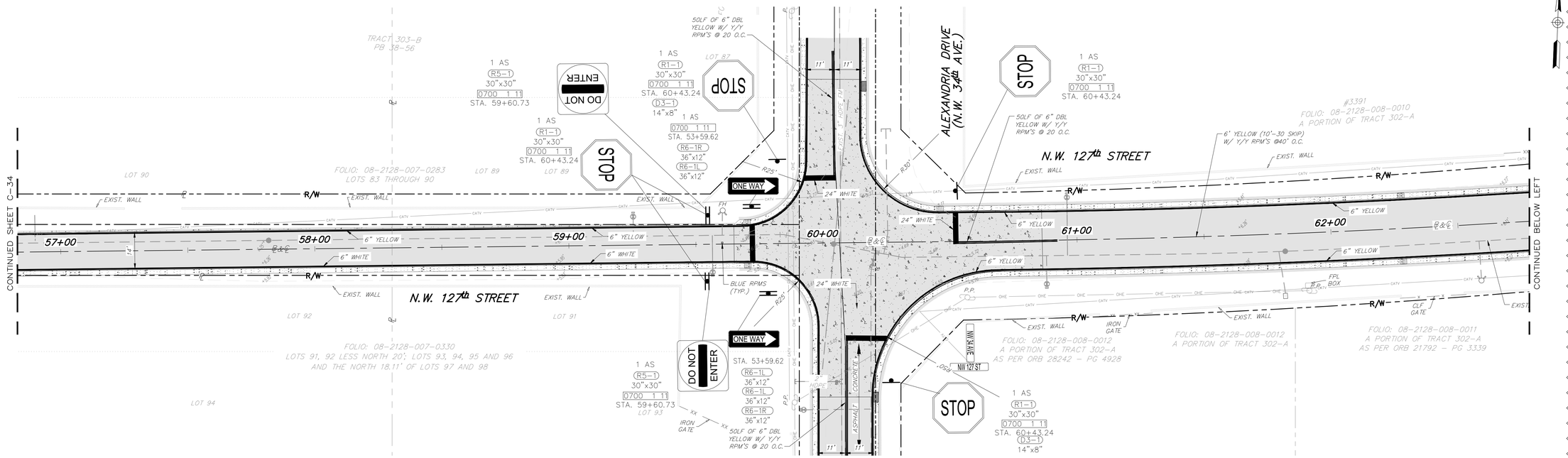
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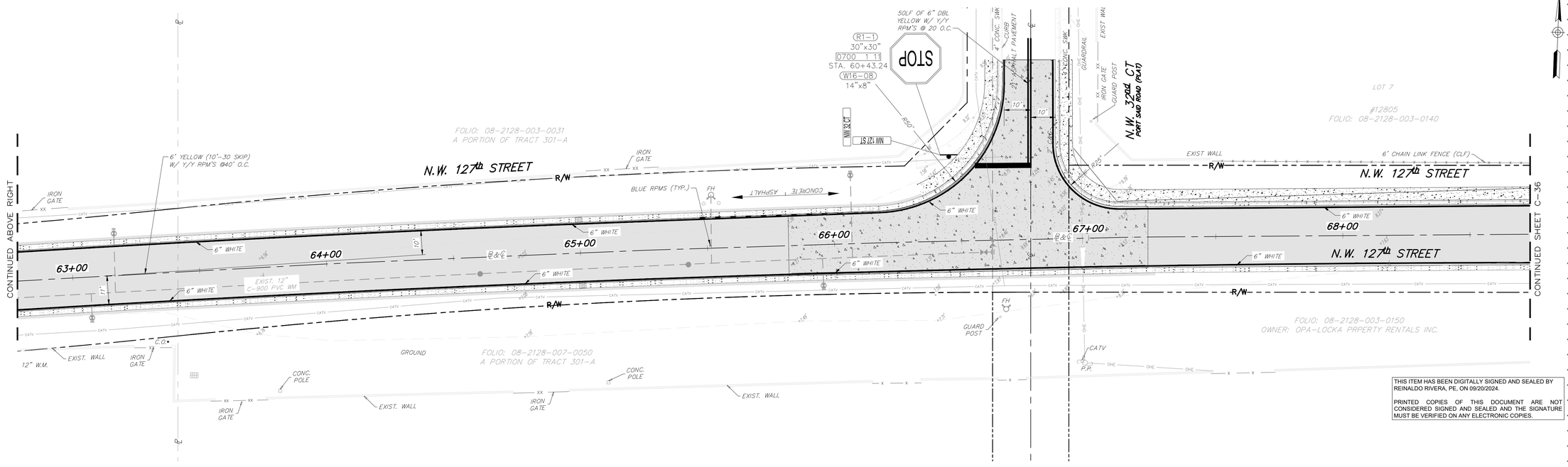
Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
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(305) 753-2605

PROJECT No: 19-00098
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SHEET C-35

DRAWING No. 40 OF 43





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CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
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PROJECT No: 19-00098

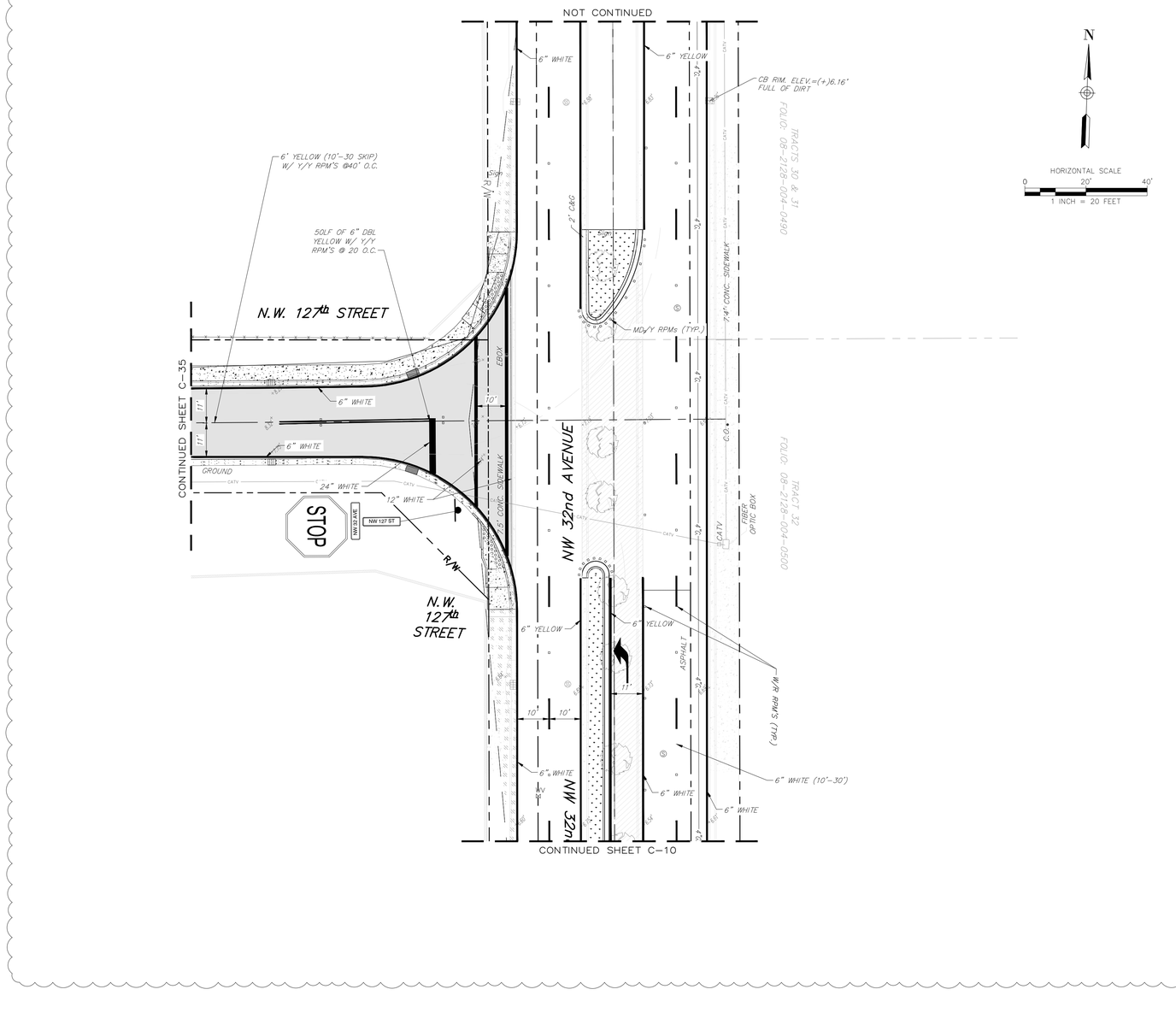
PCTS No:

FILE NAME: OPA-LOCKA-TASK #4 - PMS.DWG

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SHEET C-36

DRAWING No. 41 OF 43



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(305) 753-2605

PROJECT No: 19-00098

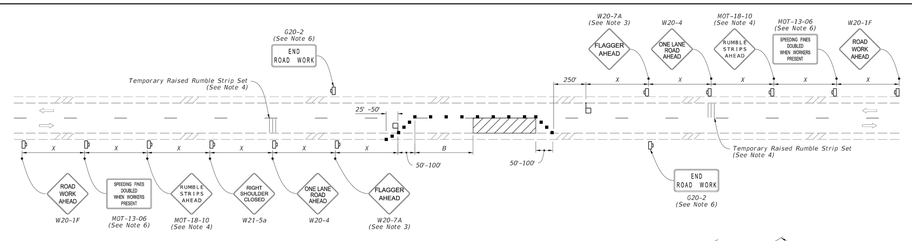
PCTS No:

FILE NAME: OPA-LOCKA-TASK 04 - PMS.DWG

DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-37

DRAWING No. 42 OF 43



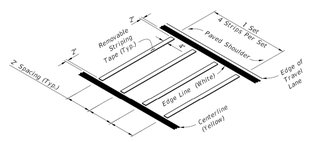
NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle
   b. Official vehicle
   c. Pilot vehicles
   d. Traffic signals

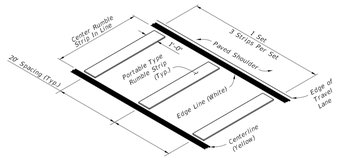
   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. Railroad Crossings:
   a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
   b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification and Direction of Traffic



OPTION - 1
REMOVABLE STRIPING TYPE



OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

LAST REVISION	REVISION	DESCRIPTION:
11/01/21		

FDOT FY 2023-24 STANDARD PLANS

TWO-LANE, TWO-WAY
WORK WITHIN THE TRAVEL WAY

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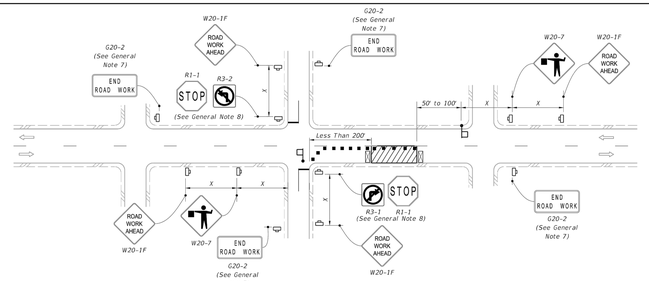
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GENERAL NOTES:

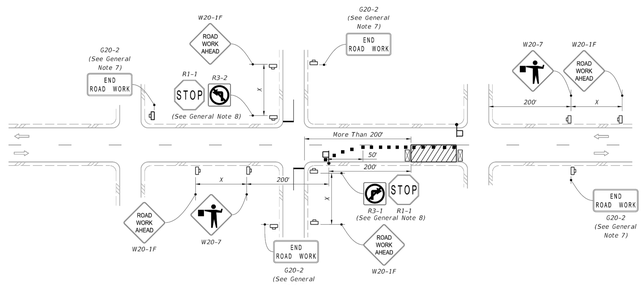
1. This Index applies to two-lane, two-way roadways with work within or near the intersection.
2. X = Work Zone Sign Spacing
   See Index 102-600 for "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).
4. If vehicles in a parking zone block the line of sight to TCZ signs, locate and post mount signs in accordance with Index 700-101.
5. If the work area extends across a crosswalk, close the crosswalk in accordance with Index 102-660.
6. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.
7. The "End Road Work" signs (G20-2) along with the associated work zone sign distances may be omitted when the work zone will be in place for 24 hours or less.
8. As an option to the "STOP" sign (R1-1) and Restricted Left/Right Turning Movement sign (R3-1 or R3-2), the "SIDE ROAD INTERSECTING THE WORK ZONE" flagging operation from Index 102-600 may be used.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Stop Bar
- Flagger
- Lane Identification and Direction of Traffic



LANE CLOSURE FOR WORK LESS THAN 200' FROM INTERSECTION



LANE CLOSURE FOR WORK MORE THAN 200' FROM INTERSECTION

LAST REVISION	REVISION	DESCRIPTION:
11/01/22		

FDOT FY 2023-24 STANDARD PLANS

TWO-LANE, TWO-WAY, INTERSECTION WORK

INDEX	SHEET
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TABLE 1
CHANNELIZING DEVICE SPACING

WORK ZONE SPEED (MPH)	MAX. SPACING (FEET)			
	CONES OR TEMPORARY TUBULAR MARKERS		TYPE I BARRICADES, TYPE II BARRICADES, VERTICAL PANELS, OR DRUMS	
	TAPER	TANGET	TAPER	TANGET
≤ 45	25	50	25	50
≥ 50	25	50	50	100

TABLE 2
TAPER LENGTH "L"

WORK ZONE SPEED (MPH)	MIN. LENGTH (FEET)
≤ 40	$L = \frac{WS^2}{60}$
≤ 45	$L = WS$

WHERE: W = WIDTH OF OFFSET IN FEET
S = SPEED IN MPH

TABLE 3
WORK ZONE SIGN SPACING "X"

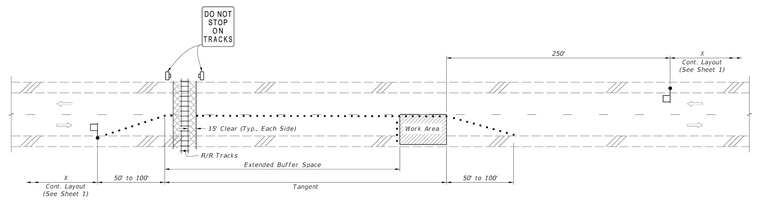
ROAD TYPE	MIN. SPACING (FEET)
ARTERIALS AND COLLECTORS WITH WORK ZONE SPEED ≤ 40MPH	200
ARTERIALS AND COLLECTORS WITH WORK ZONE SPEED ≥ 45MPH	500
LIMITED ACCESS ROADWAYS *	1,500

* FOR LIMITED ACCESS ROADWAYS WITH WORK ZONE SPEED ≤ 55 MPH, THE MINIMUM SPACING MAY BE REDUCED IN ACCORDANCE WITH THE MUTCD AND AS APPROVED BY THE ENGINEER.

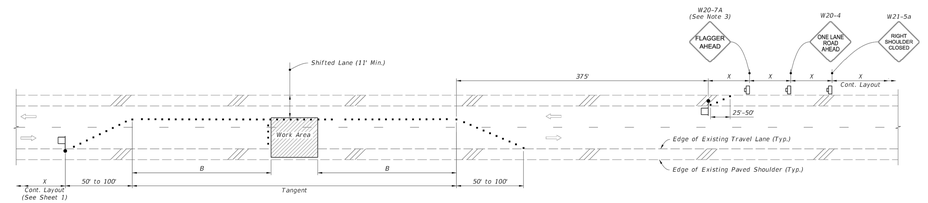
TABLE 4
BUFFER LENGTH "B"

WORK ZONE SPEED (MPH)	MIN. LENGTH (FEET)
25	155
30	155
35	155
40	155
45	155
50	155
55	155
60	155
65	155
70	155

NOTE: WHEN BUFFER LENGTH "B" CANNOT BE ATTAINED DUE TO GEOMETRIC CONSTRAINTS, USE THE GREATEST LENGTH POSSIBLE, BUT NOT LESS THAN 155 FEET.



TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION



TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE
(For Work Operations In place 24 Hours or Less)

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification and Direction of Traffic

SPECIAL CONDITIONS

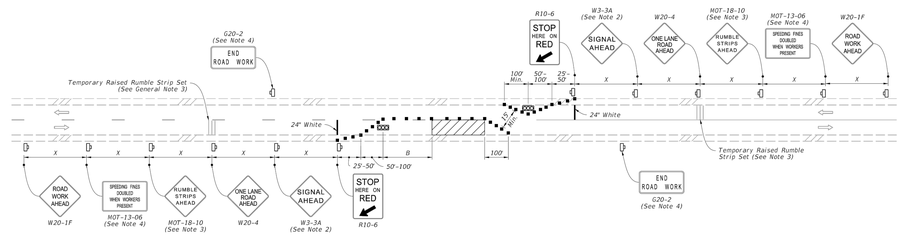
LAST REVISION	REVISION	DESCRIPTION:
11/01/21		

FDOT FY 2023-24 STANDARD PLANS

TWO-LANE, TWO-WAY
WORK WITHIN THE TRAVEL WAY

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NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", and channelizing device spacing values.
2. Optionally, use "Signal Ahead" signs with symbols (W3-3) instead of "Signal Ahead" signs with text (W3-3A).
3. Use temporary raised rumble strips in accordance with Index 102-603.
4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.
5. For the maximum distance between temporary traffic signals, do not exceed the distance at which the temporary traffic signals can safely communicate. When the distance temporary traffic signals is greater than 0.25 miles, use a combination of a pilot vehicle and manually-controlled temporary traffic signals.
6. Monitor temporary traffic signals by having one or more workers present during operation. In the event of a temporary traffic signal failure, use flaggers to control traffic.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Temporary Traffic Signal
- Lane Identification and Direction of Traffic

LAST REVISION	REVISION	DESCRIPTION:
11/01/22		

FDOT FY 2023-24 STANDARD PLANS

TWO-LANE ROADWAY, LANE CLOSURE USING
TEMPORARY TRAFFIC SIGNALS

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MOT NOTES

1. THE CONTRACTOR SHALL BEGIN CONSTRUCTION ALONG NW 127TH STREET.
2. THE CONTRACTOR SHALL MAINTAIN TEMPORARY ACCESS TO LOCAL BUSINESSES, AT ALL TIMES.
3. THE CONSTRUCTION SHALL TAKE PLACE DURING NIGHTTIME HOURS.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY REINALDO RIVERA, PE, ON 09/20/2024.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

CITY OF OPA-LOCKA FLORIDA EST. 1926

300 ENGINEERING GROUP, LLC
2222 Ponce de Leon Blvd.
Suite 300
Coral Gables, Florida

CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

MOT NOTES AND DETAILS

DRAWING HISTORY

RELEASED FOR		DATE	BY
30%			
60%	X	11/18/22	AD
90%	X	12/16/22	A.D
PERMIT SET	X	05/05/23	A.D
BID SET	X	09/19/24	A.D

REVISIONS

No.	DESCRIPTION	DATE	BY
1	DERM COMMENTS	05/15/22	AD
2	DTPW COMMENTS	07/30/24	AD
3	DTPW COMMENTS	09/16/24	AD

APPROVALS

CHIEF ENGINEER:
SECTION HEAD:
PROJECT MGR.:
DESIGNED: AD | CHECKED: LJ
DRAWN: RE | FINAL CHECK: RR

REINALDO J. RIVERA LICENSE No. 83476 STATE OF FLORIDA PROFESSIONAL ENGINEER

Reinaldo J. Rivera, P.E.
Civil Engineer
STATE OF FLORIDA – LICENSE NO. 83476
2222 PONCE DE LEON BLVD, SUITE 300
CORAL GABLES, FLORIDA 33134
(305) 753-2605

PROJECT No: 19-00098
PCTS No:
FILE NAME: OPA-LOCKA-TASK 04 - MOT.DWG
DATE: 9/20/24 | SCALE: AS SHOWN

SHEET C-38

DRAWING No. 43 OF 43

CITY OF OPA-LOCKA

ITB NO: 24-TBA

INVITATION TO BID(ITB)
Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project

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01015 INDEX OF DRAWINGS

01016 SAFETY REQUIREMENTS, HURRICANES PREPAREDNESS AND PROTECTION OF PROPERTY

01018 ENVIRONMENTAL CONTAMINATION

01025 MEASUREMENT AND PAYMENT

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01090 REFERENCE STANDARDS

01100 SPECIAL PROJECT REQUIREMENTS

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01581 PROJECT SIGNS

01600 MATERIALS AND EQUIPMENT SHIPPING, HANDLING, STORAGE AND PROTECTION
01700 PROJECT CLOSEOUT
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02510 ASPHALTIC CONCRETE PAVEMENT
02505 CLEANING AND TESTING OF MAINS
02510 ASPHALTIC CONCRETE PAVEMENT
02526 CONCRETE PAVEMENT, CURB AND WALKWAYS
02536 PRECAST MANHOLES & COVERS
02620 CORRUGATED HDPE DRAINAGE PIPE
02630 OUTFALL HEADWALL
02730 STORMWATER AREA DRAINS AND INLETS
02721 STORMWATER CURBSIDE DRAINS AND INLETS
02725 GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS
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03400 PRECAST PRESTRESSED CONCRETE

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DIVISION 10 – SPECIALTY CONSTRUCTION

10001 STORMSAFE VAULT TREATMENT STRUCTURE

10001 STORMSACK PLUS

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15002 FORCE MAINS

15005 PVC C900 WATER MAIN

15023 CODE AND STANDARDS

15060 PIPING AND FITTINGS

15100 VALVES – GENERAL

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15120 GATE VALVES

15125 PLUG VALVES

15130 MISCELLANEOUS VALVES

15201 WATER SERVICE INSTALLATIONS

15202 METER BOXES, SECTIONAL PLATES AND VAULTS FOR WATER SERVICE

15203 WATER METER VALVES

15330 FIRE HYDRANTS

15995 DISINFECTION OF WATER MAINS

DIVISION 16 – (NOT USED

ITB NO: 24-TBA

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

Sealed Proposals for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project will be received by the City of Opa-locka at the Office of the City Clerk, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, by 2:00 p.m., TBA (ET). Any ITB Package received after the designated closing time will be returned unopened. The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked ITB for Banking Services and Bond Refinancing.

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that proposer whose proposal best complies with the **ITB NO: 24-TBA** requirements. Proposers may not withdraw their proposal for a period of ninety (90) days from the date set for the opening thereof.

City Clerk
Joanna Flores, CMC

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka is requesting proposals from qualified professional firms to provide Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project with the terms, conditions, and specifications contained in this Invitation to Bid (ITB).

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 pm (ET) on TBA. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: ITB NO. 24-TBA – Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project. This package shall also include the Proposer's return address.

Proposers may withdraw their proposals by notifying the City in writing at any time prior to the deadline for proposal submittal. After the deadline, the proposal will constitute an irrevocable offer, for a period of 90 days. Once opened, proposals become a record of the CITY and will not be returned to the Proposer.

The City cautions proposers to ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611, Option 1, before the proposal closing time. Any proposal received after the established deadline will not be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an original and six (6) copies (a total of 7) plus one copy on USB Flash Drive in PDF format of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail, or any other mode of delivery.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the ITB.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the ITB until eight (8) days prior to the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the ITB so that they may read and interpret such for themselves. No employee other than the City's Purchasing

Officer is authorized to interpret any portion of this ITB or give information as to the requirements of the ITB in addition to what is contained in the written ITB document.

1-6. Addenda: The City may record its response to inquiries and any supplemental instructions in the form of written addenda. The City may post addenda on the City's website up to five (5) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the ITB opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Purchasing Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this ITB does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed and evaluated by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties. The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re- advertise for other proposals.

1-8. Contractual Agreement: This ITB and Proposer proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. Any and all legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible**.**

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke the exemptions to disclosure provided by law in the response to the ITB and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this ITB or the service, study, or project to which it relates.

1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions. In the event the Proposer is a governmental entity or self-insured organization, different insurance requirements may apply. Misrepresentation of any material fact, whether intentional or not, regarding the Proposer's insurance coverage, policies or

capabilities may be grounds for rejection of the proposal and rescission of any ensuing Agreement.

1-13. Licenses: Proposers, both corporate and individual, must be fully licensed and certified in the State of Florida at the time of ITB submittal. The proposal of any Proposer who is not fully licensed and certified shall be rejected.

1-14. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. No public entity shall award any contract to or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the ITB proposal forms, Proposer attests that they have not been placed on the "Convicted Vendor List".

1-15. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka, Miami-Dade County or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work, goods, or services for the City of Opa-locka.

1-16. Drug-Free Workplace: Preference shall be given to Proposers with Drug-Free Workplace (DFW) programs. Whenever two or more proposals which are equal with respect to price, quality, and service are received by the City for the procurement of commodities or contractual services, a proposal received from a Proposer that completes the attached DFW form certifying that it is a DFW shall be given preference in the award process.

1-17. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

1-18. Protests: Protests of the plans, specifications, and other requirements of the Request for Proposal and bids must be received in writing by the City Clerk's Office at least ten (10) working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-19. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances.

A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (ITB), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**
Release Date	TBA
Pre-Bid	NA
Written Questions Due	TBA @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "ITB No: Bid Questions"
Response to Questions	TBA @ 5:00pm (ET)
Due Date/Bid Opening	TBA @ 2:00 pm (ET)
Award Recommendation	TBA
Commission Approval	TBA
Post Award	TBA

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

TO THE COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA

Ladies and Gentlemen:

The undersigned bidder proposes to furnish all labor, tools, material and supplies, and to sustain all the expense incurred in doing the work set forth below that may be awarded the undersigned by the City of Opa-Locka, Florida, through its proper officers, and to do the same strictly in accordance with the plans and contract documents on file in the Office of the City Engineer of Opa-Locka, which are referred to below and made a part hereof, at the following combination of lump sum prices:

Item No.	Estimated Quantity	Description	Total
1.	Lump Sum (Divided into 2 or 4 payments See Measurement and Payment for Conditions)	For performing preparatory work and operations in mobilizing for beginning the work of the Project, but excluding materials and permit costs, both of which are paid under other payments items, the lump sum of _____ Dollars and _____ Cents	$_____
Water System Improvements			
2.	6 each	For furnishing and constructing Fire Hydrant Assemblies (FHs) for water main, per Standard Detail WS 4.50, at the locations shown on the Plans, complete, the price each of _____ Dollars and _____ Cents	$_____

Item No.	Estimated Quantity	Description	Total
3.	2 each	For demolishing damaged fire hydrant assemblies, the price per each of _____ Dollars and_____Cents	$_____
4.	38 each	For adjusting rim elevation of existing water meters to meet proposed grade and replace lid, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
5.	8 each	For adjusting rim elevation of existing water valves to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
6.	6 each	For adjusting rim elevation of existing water ARV's to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Sewer System Improvements			

Item No.	Estimated Quantity	Description	Total
7.	150 LF	For selling and delivering to the City 3" HDPE pipe and fittings for sewer force main, the price per lineal foot of _____ Dollars and_____Cents	$_____
8.	150 LF	For installing 3" HDPE pipe and fittings for sewer force main along Cairo Lane and across NW 135th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
9.	Lump Sum	For selling and delivering to the City all valves necessary and tapping sleeve for the hot tapping of the existing 16" CIP FM at 135th street, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents	$_____
10.	Lump Sum	For hot tapping the existing 16-inch cast iron force main at: NW 135th Street (STA 43+88±) including installing all valves and tapping sleeve necessary for connection, and, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
11.	670 LF	For selling and delivering to the City 2" HDPE pipe and fittings for sewer force service connections, the price per lineal foot of _____ Dollars and_____Cents	$_____
12.	670 LF	For installing City 2" HDPE pipe and fittings for sewer service connections along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
13.	18 each	For selling and delivering to the City 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____
14.	18 each	For installing 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
15.	18 each	For selling and delivering to the City 2-inch HDPE Plugs for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
16.	18 each	For installing 2-inch HDPE Plugs for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
17.	1 each	For selling and delivering to the City 2-inch ball valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
18.	1 each	For installing 2-inch ball valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
19.	1 each	For selling and delivering to the City 2-inch flushing valve outlets with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
20.	1 each	For installing 2-inch flushing valve outlets with valve boxes for sewer force main along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
21.	1 each	For furnishing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
22.	1 each	For constructing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
23.	1 each	For selling and delivering to the City 2-inch mechanical joint plug valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
24.	1 each	For installing 2-inch mechanical joint plug valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
25.	2 each	For adjusting rim elevation of existing sewer valves to meet proposed grade, and replace cover, along Cairo Lane, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
26.	3 each	For adjusting rim elevation of existing sewer ARV's to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Drainage System Improvements			
27.	1595 LF	For selling and delivering to the City 24" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
28.	1595 LF	For installing City 24" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
29.	395 LF	For selling and delivering to the City 18" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
30.	395 LF	For installing City 18" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
31.	105 LF	For selling and delivering to the City 15" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of _____ Dollars and_____Cents	$_____
32.	105 LF	For installing City 15" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
33.	Lump Sum	For furnishing and installing two (2) StormSafe Vaults model SSV40-2-000 by FABCO for the stormwater treatment system at Cairo Lane, the lump sum price of _____ Dollars and_____Cents	$_____
34.	33 EA	For furnishing and installing StormSack Plus model PSS1626-1E-000 by FABCO for the stormwater treatment system at Cairo Lane, the unit price of _____ Dollars and_____Cents	$_____
35.	Lump Sum	For demolishing and disposing existing NSBB Model #NSBB-8-14 drainage treatment structure, the lump sum price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
36.	12 each	For selling and delivering to the City precast stormwater structures along Cairo Lane and NW 127th Street, including rims and covers, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
37.	12 each	For installing precast stormwater structures, including rims and covers along Cairo Lane and NW 127th Street, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
38.	3 each	For repairing damaged stormwater catch basins structures S-2 and S-3 along Cairo Lane and S-27 along NW 127th Street, the unit price of _____ Dollars and_____Cents	$_____
39.	28 each	For adjusting rim elevation of existing stormwater catch basins to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
40.	6 CY	For furnishing and installing precast reinforced concrete headwalls for stormwater outfall, per FDOT index No. 430-030, as indicated in the Plans, the price per cubic yard of	$_____

Item No.	Estimated Quantity	Description	Total
41.	115 TON	For furnishing and installing Rubble (Broken Stone) at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____
42.	5 CY	For furnishing and installing sand-cement bags at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
43.	1 EA	For furnishing and installing manatee grate for 36" pipe for stormwater outfall, as indicated in the Plans, the unit price of _____ Dollars and_____Cents	$_____
44.	1 EA	For furnishing and installing 36-inch in-line check valves with valve boxes for stormwater outfall, as indicated in Plans, the unit price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
45.	Lump Sum (Dedicated Allowance)	For dewatering, transporting to, and safe disposal of, potentially contaminated groundwater, as required for underground pipe installation, the lump sum price of _____ Dollars and_____Cents	$ 300,000
Roadway Reconstruction			
46.	740 CY	For the excavating of existing backfill material along Cairo Lane and NW 127th Street, for the grading for roadway improvements, the price per cubic yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
47.	765 CY	For furnishing and placing suitable Backfill required for the grading for roadway reconstruction along Cairo Lane, NW 127th Street, the price per cubic yard of _____ Dollars and_____Cents.	$_____
48.	7550 SY	For milling (nominal 2 inch thick), surface course for permanent paving repairs along Cairo Lane, the price per square yard of _____ Dollars and_____Cents.	$_____
49.	1300 SY	For selling and delivering to the City Concrete for the installation of 8-inch thick Concrete Pavement per FDOT index No. 350, the price square yard of _____ Dollars and_____Cents.	$_____
50.	1300 CY	For constructing 8-inch thick Concrete Pavement per FDOT index No. 350, as indicated in the Plans, the price per price square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
51.	12150 SY	For furnishing and constructing asphalt base, B-12.5, min. 3.5-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
52.	12150 SY	For furnishing and constructing superpave asphaltic concrete, SP-12.5, PG-76-22 min. 2-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
53.	12150 SY	For furnishing and constructing friction course, FC-12.5, PG-76-21, min. 1-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
54.	1830 SY	For milling (nominal 1 inch thick), surface course for permanent paving repairs along NW 32nd Ave, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
55.	1830 SY	For constructing for Type "V" permanent paving repairs (minimum 1 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
56.	500 SY	For constructing for Type "V" permanent paving installation (minimum 2 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
57.	600 SY	For milling (nominal 1.5 inch thick), surface course for permanent paving repairs along NW 135th Street, the price per square yard of _____ Dollars and_____Cents.	$_____
58.	600 SY	For constructing for Type "V" permanent paving repairs along NW 135th Street Ave (Min 1.5-inch overlay), as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
59.	740 SF	For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
60.	1635 SF	For furnishing and constructing 6-inch concrete driveway approach to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
61.	360 LF	For furnishing and constructing concrete curb and gutter restoration to match existing along the intersection between NW 127th Street and NW 32nd Avenue, the price per linear foot of _____ Dollars and_____Cents.	$_____
62.	8995 LF	For furnishing and constructing concrete valley gutter along Cairo Lane and NW 127th Street, the price per linear foot of _____ Dollars and_____Cents.	$_____
63.	30 LF	For furnishing and installing general guardrail at the outfall along Cairo Lane, the price per linear foot of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
64.	Lump Sum	For furnishing and installing pavement markings, including signage and raised pavement markers, as indicated in plans, the lump sum price of _____ Dollars and_____Cents.	$_____
65.	Lump Sum	For demolishing and disposing existing median curb at the intersection between NW 127th Street and NW 32nd Ave, as indicated in plans, the price per lump sum of _____ Dollars and_____Cents.	$_____
66.	14 EA	For removing and disposing existing trees located at the median curb at the intersection between NW 127th Street and NW 32nd Ave, the unit price of _____ Dollars and_____Cents.	$_____
67.	Lump Sum	For providing full Traffic Control during construction along Cairo Lane, Alexandria Drive and NW 127th Street Maintenance of Traffic, the lump sum price of _____ Dollars and_____Cents.	$_____
Dedicated Allowances			
68.	7 each (Dedicated Allowance)	For repairing damaged fire hydrants assemblies, per Standard Detail WS 4.50, the price per each of _____ Dollars and_____Cents	$ 24,500

Item No.	Estimated Quantity	Description	Total
69.	7 each (Dedicated Allowance)	For demolishing and replacing damaged fire hydrant assemblies, per Standard Detail WS 4.50, the price per each of $6,750 Dollars and 0 Cents	$ 47,250
70.	7 each (Dedicated Allowance)	For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, the price per each of $1,100 Dollars and 0 Cents	$ 7,700
71.	38 each (Dedicated Allowance)	For repairing damaged water meters, including boxes, along Cairo Lane and NW 127th Street as per Standard Details shown in Plans, the price each of, $1,000 Dollars and 0 Cents	$ 38,000
72.	10 each (Dedicated Allowance)	For repairing damaged stormwater catch basins structures, the unit price of $5,500 Dollars and 0 Cents	$ 55,000
73.	5300 SF (Dedicated Allowance)	For sheeting and shoring ordered left in place by the Engineer for sewer and drainage improvements, the price per square foot of $20 Dollars and 0 Cents.	$ 106,000

Item No.	Estimated Quantity	Description	Total
74.	1500 CY (Dedicated Allowance)	For removal, transport and legal disposal of above-ground debris, including tipping fees, the price per cubic yard of _____$185_____ Dollars and_____0_____Cents.	$_277,500_____
75.	2000 SY (Dedicated Allowance)	For restoring sodded area (harmonization), the price per square yard of _____$19_____ Dollars and_____0_____Cents.	$__38,000_____
76.	**Sub-Total – Bid Items 1 through 75**	**$_____**	
77.	Dedicated Allowance	For providing uniformed, off-duty policemen for the purpose of maintenance of traffic, the aggregate sum of _____ Dollars and_____Cents.	$_____
78.	Dedicated Allowance	For all cost of required permit fees including Soil Management Plan and Health & Safety Plan, impact fees, if required by the Engineer, the sum of 5% of the Subtotal, Item 76 (0.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
79.	Contingency Allowance	For unforeseen conditions, for minor construction changes and for quantity adjustments, if ordered by the Engineer, the sum of 10% of the Subtotal, Item 76 (.10) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
80.	Contingency Allowance	For unforeseen plan revisions due to ongoing permitting efforts if required by permitting approvals, only to be used if required and approved by the City, the sum of 5% of the Subtotal, Item 76 (.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
81.	**TOTAL BID – (Sum of Bid Item Nos. 76, 77, 78, 79, and 80,)**	$_____	

Note: For a detailed description of each Quotation Item, refer to Section 01025 of the Specifications entitled "Measurement and Payment.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

The City of Opa-Locka reserves the right to waive any informality in any bid and to reject any or all bids.

TOTAL BASE BID PRICE FOR PROPOSAL (ITEMS 1 THROUGH 81): $_____
(FIGURES)

_____Dollars and

_____Cents

AMOUNTS SHALL BE SHOWN ON BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BASE BID.

Bidder acknowledges that included in the various items of the bid proposal and in the TOTAL BASE BID PRICE are costs for complying with the Florida Trench Safety Act, F.S. 553.60 et. seq. The Bidder by signing and submitting the Trench Safety Act Compliance Statement is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards.

Contract award shall be based upon the total base bid price, as identified above, by the lowest responsive, responsible bidder.

_____ _____

FIRM NAME (PRINT) BIDDER'S SIGNATURE

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

GENERAL CONDITIONS

1.0 PERFORMANCE OF WORK: The Contractor shall supply all labor, transportation, materials, machinery, tools, apparatus and equipment necessary for the entire proper and substantial completion of his work, and be accountable for the safe, proper and reasonable construction, maintenance and use of the same during construction, and shall remove all construction equipment upon completion, and shall perform all work in the best and most workmanlike manner. Special care shall be taken by the Contractor in placing and removing stock piles of material, and in the work in general to avoid unnecessary injury to either public property or other areas adjacent to the work.

2.0 CONCURRENT WORK: Work may be performed concurrently by the utilities in the City or the City's Contractor in the right-of-way and it shall be the responsibility of the Contractor to coordinate his work with the utility companies, the City and the City's Contractors.

3.0 USE OF PUBLIC STREETS: Construction shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Any other excavated material spilled from trucks shall be removed by the Contractor and the streets shall be cleaned twice daily to the satisfaction of the Public Works Director.

4.0 EXISTING UTILITIES AND STRUCTURES: It will be the Contractor's responsibility to exercise all caution in the vicinity of any utility. The Contractor shall be fully responsible for, and make good all damages to buildings, telephone or other cables, sewers, water pipes, pavement, driveways, walls, sprinkler systems, survey markers, or other structures which may be encountered whether or not shown on the plans. The Contractor shall have a utility check performed prior to any construction.

4.1 The locations of existing utilities have been prepared using the best information available however, the information is not guaranteed. The Contractor shall be responsible for determining the location, character and depth of all utilities. The Contractor shall be responsible for and make good all damages to all pavement structures and utilities which may be encountered whether or not shown on the plans. The cost of restoration shall be included in the unit price stated in the proposal for the related work. No extras for restoration will be allowed.

4.2 The Contractor shall protect from damage all utilities, structures, surface and subsurface structures at or near the site of the work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. If the Contractor fails or refuses to

repair any such damage promptly, the City may have the necessary work performed and charge the cost thereof to The Contractor.

4.3 At points where The Contractor's operations are adjacent to utility facilities, which if damaged, might result in expense, loss, disruption of service or other undue inconvenience to the public or to the Owner, work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the Owner and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay caused by The Contractor's operations.

4.4 The Contractor shall not repair or attempt to repair utility damage but shall immediately contact the utility owner. The Contractor shall obtain the name, address, and telephone number of each utility company to contact. The Contractor shall submit to the Engineer these said names and addresses.

4.5 The Contractor shall comply with the Florida Building Code and City Code regarding precautions to be taken in the protection of existing vegetation, structure, utilities and improvements.

4.6 The Contractor shall maintain access to fire hydrants and alarm boxes throughout the prosecution of the work. Hydrants and fire alarm boxes shall be kept clear and kept visible at all times unless approved otherwise. If visibility cannot be maintained, The Contractor shall provide clearly visible signs showing the location of the fire hydrant and fire alarm boxes.

4.7 The Contractor shall comply with the requirements of the Clean Air Act and the Federal Water Pollution Control Act as well as other requirements specified in those regulations and guidelines listed thereunder.

5.0 **EXISTING LANDSCAPING:** The Contractor shall be fully responsible for maintaining in good condition, existing trees, grass and shrubs situated within the designated right-of-way, project site or on private property adjacent to the work.

6.0 **EXISTING SIGNS AND UTILITY CASTINGS:** All existing signs and utility castings shall be preserved and shall remain the property of the City of Opa-Locka. Those not reused shall be delivered to the Opa Locka Public Works Yard at 12950 NW 42 Ave in Opa Locka, FL 33054.

7.0 **STOCK PILING MATERIALS:** Contractor shall not stockpile materials at the project site unless approved in writing by the Engineer.

8.0 **PERMITS:** The Contractor shall obtain all required occupational licenses and permits, etc., and pay all required fees. Permits issued by the City will be issued without charge to the Contractor

9.0 **EXTRAS:** Bills for extras will be allowed only when work is ordered in writing and approved by the Public Works Director. No money will be allowed for extra work

unless approved in writing, beforehand, by the Public Works Director.

10.0 CLEANING UP: The Contractor will be required to leave the work and adjacent areas free of any accumulated rubbish or surplus materials on a daily basis, unless otherwise directed by the Public Works Director. In the event of failure or undue delay on the part of the Contractor, the City may employ such equipment and laboras may be necessary, and charge such costs against the Contractor and deduct the amount from the monies due the Contractor for work performed.

11.0 RESTORATION: The Contractor shall complete all restoration as the work is completed but in no event later than five (5) working days.

12.0 TESTING: The Engineer or other person designated by the Public Works Director to supervise the work shall have the right at any time to have tests made on any material used on the job. All expenses for tests shall be borne by the City of Opa-Locka, except the cost of re-testing materials which failed to meet the specifications and waiting time due to Contractor failure to be ready for tests when scheduled. The cost and scheduling of such re-testing shall be the responsibility of the Contractor. All re-testing shall be done by the testing laboratory which test the failed samples. The Contractor will inform the City of his source of materials with sufficient time to secure the necessary samples and perform the necessary tests. The Contractor shall request and receive inspections of specific phases of work asrequired elsewhere in these specifications. The Contractor shall provide current modified proctor test results for all fill material used on the job.

13.0 PAYMENT: Payment will be made in full compensation for all work performed, materials, labor, tools and equipment furnished, and incidental expenses necessary to complete the work. Payment shall be made on 90% of the monthly estimate and upon the presentation of partial releases of lien. Final payment shall be made upon presentation of a completion statement, receipt of the final releases of lien, receipt of as-built drawings and after final acceptance by the City.

14.0 ACCEPTANCE: Acceptance by the City shall not relieve the Contractor of the responsibility of correcting any defective part of the work resulting from either workmanship or materials or replacing or repairing damaged property resulting from any phase of the Contractor's work.

15.0 GUARANTEE: The Contractor shall guarantee all materials and workmanship for a period of one year from the date of **acceptance** by the City.

16.0 LINE AND GRADE: Where required as determined by the Engineer, the City will establish a base line and reference elevations. All additional lines and grades required for completion of the work shall be furnished at the Contractor's expense.

17.0 TRAFFIC MAINTENANCE: The Contractor shall provide all temporary signing, striping, detouring, barricading, signals, competent flagmen, etc. required in accordance with the minimum requirements of the latest Manual of Uniform Traffic

Control Devices, whenever and wherever needed for pursuance of the project, and/or as directed by the Engineer. The Contractor shall also coordinate these operations with the City of Opa-Locka Public Works Department. The Contractor shall supply the Engineer with a traffic maintenance plan.

18.0 PROTECTION OF WORK: It shall be the Contractors' responsibility to protect the public and workmen from ongoing construction hazards.

19.0 UNIFORMED POLICE: The Contractor shall be responsible for obtaining the services of the uniformed police officers as needed or as directed by the Engineer. The Contractor shall be reimbursed for the direct, actual expenses for such uniformed police officers.

20.0 INSPECTION: Inspection will be required during all phases of construction, and it shall be the Contractor's responsibility to contact the Engineer or its representative when any work is being performed. The Contractor shall also be responsible for coordinating all inspections of work performed by Subcontractors. Failure to contact the Engineer/Architect or its representatives to obtain the required inspections shall be sufficient cause for rejection.

21.0 LICENSES: The Contractor and all Subcontractors shall submit at the time of bidding, copies of all licenses held by the Company that pertain to the type of work to be performed under this contract. Failure to submit copies of licenses is grounds for rejection of the bid.

22.0 CONTACT PERSON: The Contractor shall provide the Engineer with a local (Miami Dade County) telephone number where the Contractor can be contacted 24 hours a day for the duration of the project.

23.0 UTILITY COORDINATION: The City will not be liable for any delay or added expense the Contractor experiences due to the actions of others, nor shall the City be held responsible for any damages which may be incurred, due to the actions of the Contractor or representative.

24.0 EXAMINATION OF PREMISES: Before submitting proposals for his work, each bidder will be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obligated to work, including all conditions which will in any way affect the work under this contract.

25.0 NON-EXCLUSIVE CONTRACT: Nothing in this contract shall prevent the City from employing other contractors to perform the same or similar work. This can include other contractors working concurrently on the same location.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

SPECIAL CONDITIONS

1.0 SCOPE OF WORK:

1.1 CAIRO LANE AND NW 127TH STREET IMPROVEMENTS: The work generally consists of but is not necessarily limited to the following: the selling, delivering and installing of Contractor furnished materials and equipment necessary for the complete replacement of a section of 3-inch force main, a section of solid drainage trunk line ranging in size from 18-inch to 36-inc including manholes and treatment structure, and the installation of water service connections within Cairo Lane, NW 127th Street and Alexandria Drive. Replacement including cleaning and testing as required, maintenance of water and sewer service; together with all appurtenant for miscellaneous items and work for a completed project.

2.0 COMPLETE PROJECT REQUIRED: The specifications describe the various items or classes of work required enumerating or defining the extent of same where necessary to clarify the drawings, but failure to list any items shall not relieve the Contractor from furnishing, installing and performing such work where shown on the drawings, required by any part of the specifications or necessary for the satisfactory completion of the project.

3.0 WORK SCHEDULE: The Contractor shall submit schedules which show the order in which the Contractor proposes to carry out the work with dates for starting various parts of the work and estimated completion dates. The progress schedules shall be furnished to the Engineer prior to the pre-construction meeting date which will be established by the City.

4.0 PRE-CONSTRUCTION MEETING: After the contract has been awarded and signed, but prior to commencement of work, a pre-construction meeting shall be held. The meeting shall be attended by authorized representatives of the City and Contractor. The purpose of this meeting will be to review the Contractor's submitted progress schedule, clarify jurisdiction and to acquaint all parties presentwith the authorized representative to be notified. The Contractor will be notified inwriting as to the date and place of the meeting.

5.0 AS-BUILT INFORMATION: As work progresses, the Contractor must record all information pertaining to changes and deviations from the contract drawings with special attention to all underground installations. At completion of the job, the Contractor shall submit a complete set of reproducible as-built drawings to the City.

Additionally, the Contractor shall maintain a field book with all deviations recorded. The completed as-built sketches and field books shall become the property of the City. As-built information must be supplied with each pay request. Failure to provide as-built information is cause to reject pay request.

6.0 **LIQUIDATED DAMAGES:** Should the Contractor, or in the case of default, the surety, fail to fully complete the work within the time stipulated in the proposal, the minimum sum of five hundred dollars ($500.00) per day shall be deducted from any money due the Contractor not as a penalty but as liquidated damages.

7.0 **APPROVAL OF MATERIALS:**

7.1 Whenever in these plans and/or specifications a certain brand of materials is specified, it is done for establishing the level of quality, capacity and the characteristics desired. Materials or products specified by the name of manufacturer or the brand or trade name or catalog reference shall be the basis ofthe bid.

7.2 The Contractor shall make written request for the use of alternate materials within ten (10) days after the Contract is signed, and before ordering any materials requiring approval. If the Contractor makes no request for approval of alternate materials within ten (10) days of the signing of the Contract, it shall be assumed that he intends to furnish the items specified.

7.3 The use of materials other than that specified without the written approval of the Engineer shall be sufficient reason for rejection of the work.

8.0 **USE OF PUBLIC STREETS:** Construction in the right-of-way or streets shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Access to all residents' homes shall be maintained at all times. A minimum of one traffic lane shall be open at all times.

9.0 **STRIPING**:

9.1 Temporary striping shall be placed within 48-hours of completion of each course of asphalt unless another course is placed within 48-hours. The cost of temporary striping shall be included in the unit cost of permanent thermoplastic striping.

9.2 Permanent thermoplastic striping shall be placed within 30 days of completing final paving unless otherwise approved by the Engineer.

10.0 **RESTORATION OF SURVEY MARKERS:** When existing survey markers are removed or destroyed as a result of the construction, it shall be the responsibility ofthe contractor to replace them using a registered licensed surveyor.

11.0 **PROJECT LAYOUT:** The Contractor shall layout the proposed work and contact all utilities to verify utility locations. If changes are required, due to conflict or design,the

Engineer will make the final determination.

12.0 WORKING HOURS: The normal City working hours are Monday through Friday 8:00 a.m. until 5:00 p.m.

13.0 FINANCIAL STATEMENT: As part of the Contractor's submittal, he/she shall include a certified financial statement detailing the company's financial status over the previous two years.

14.0 NOTICE TO PROCEED: A single notice to proceed will be issued for this project. Upon receipt of the notice to proceed, the contractor shall commence work upon the site(s) within 10 working days and continue such work in an expeditious manner to a conclusion acceptable to the Engineer. No more than 7 consecutive days without construction activity will be allowed unless approved by the Engineer.

15.0 ENVIRONMENTAL PROTECTION:

General Requirements – The Contractor shall provide and maintain environmental protection during the life of the Contract. Environmental protection shall be provided to correct conditions that develop during the conductance of the work, or that are required to control pollution that develops during the development of project. The Contractor's operations shall comply with all Federal, State and local regulations pertaining to water, air, solid waste, and noise pollution.

Protection of Natural Resources – It is intended that the natural resources within the site and outside the limits of permanent work performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine his work activities to areas defined by the Contract Documents. All work under this contract shall be performed in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the City. At alltimes special measures shall be taken to prevent oily or hazardous substances from entering the ground, drainage areas, or local bodies of water.

Control and Disposal of Wastes – The Contractor shall transport and dispose of allwaste in a manner that complies with Federal, State, and local requirements. The Contractor shall provide the Engineer with a copy of any state and/or local permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses and the location of the disposal area shall beprovided prior to transporting any waste material. Fueling and lubricating of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil shall be disposed of in accordance with approved procedures meeting Federal, State and local regulations.

Preservation of Water Courses – The Contractor shall maintain the working area free of excess debris and litter. Furthermore, the Contractor shall take all necessary precautions to protect the Canal waterway in a manner that complies

with Federal, State, and local requirements.

The maximum use of low-noise emission products as certified by the Environmental Protection Agency shall be made when available.

16.0 **SAFETY**: The Contractor shall be responsible for the safety of the Contractor's employees. The Contractor shall abide by all Federal, State, County, and City safety requirements and regulations. The Contractor is responsible to furnish the Contractor's employees with all required safety equipment. The Contractor is required to comply with all applicable OSHA regulations including, Right to Know, Confined Space Entry, Airborne Blood Pathogens.

The Contractor is fully responsible to furnish safety equipment to all of the Contractor's employees on the Owner's job site, including but not limited to safety glasses, gloves, vests, hard hats, braces or any other required safety item. The Contractor is required to make certain that each employee is wearing the proper safety clothing including shoes.

17.0 **CONFINED SPACE ENTRY PERMIT:** The Contractor must comply with all the provisions contained in OSHA 1910.146 and shall show proof of compliance with the first project invoice. No payment shallbe made until such proof is presented and approved by the City

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18.0 **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY.** THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THESE CHANGES SHALL BE REFLECTED IN ITEM NO. 80 OF THE BID ITEM LIST.

TECHNICAL SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

01010 SUMMARY OF WORK

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. This section describes the project in general and provides an overview of the extent of the work to be performed under this Contract. Detailed requirements and extent of work is stated in the applicable Specification sections and shown on the Contract Drawings. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the work under this Contract.

1.0.2 DEFINED TERMS

A. As-Built Drawings: As-built drawings reflect field changes and construction modifications to the conformed Bid Documents.

B. Contract Documents: Shall mean all those documents named in the contract.

C. Contractor: Contractor shall mean any person engaged to supply labor, materials por equipment for use in the fulfillment of the project.

D. Construction Drawings: Shall mean the drawings, plans, or reproduction thereof which show scope, character, location, dimensions, and other details of the work to be performed under the Contract Documents.

E. Engineer: Shall mean the City Engineer of the City of Opa-Locka, Public Works Department, or City's designee.

F. Project: Shall mean and include all construction, for which the Contractor is responsible under the contract documents

G. Regulations: Shall mean laws, ordinances, statutes, and lawful order issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the work.

H. The City: Shall mean the City of Opa-Locka, Florida.

I. Work: Shall mean all labor, permits, bonds, equipment, materials and incidentals required.

1.0.3 SPECIFICATIONS

A. The specifications included in these Contract Documents establish the minimum performance and quality requirements for materials and equipment together with the minimum standards for quality of workmanship and appearance. Generally, there has been no attempt to separate the Specification sections into groups for the work of separate Subcontractors, or for work to be performed by the various trades. Should there be any question as to the interpretation of any Specification section or part of Specification section, such question should be directed to the Engineer prior to the submittal of a proposal for the work under this Contract.

B. The Cairo Lane, NW 127th Street improvements work shown on the drawings is intended to be comprehensive and descriptive, not an exact and complete representation of the actual finished work. Pipeline replacement shall include all accessories and components required to provide a complete and satisfactory system as specified, even though some items may not be specifically shown on the drawings.

C. It is the intent of the City to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

D. The Contractor shall also supply all sheeting, shoring, bracing and all other labor, material or equipment required to preclude damage to, or loss of functionality of, any existing facility or system.

1.0.4 REASONABLY IMPLIED PARTS OF THE WORK

A. Any part of the work which is not mentioned in the specifications but is shown on the drawings, or any part not shown on the drawings but described in the specifications, or any part not shown on the drawings nor described in the specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work, without extra cost to the City, as if fully described in the specifications and shown on the drawings, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the Work.

1.0.5 DESCRIPTION OF WORK

A. The project is located along Cairo Lane between NW 127th Street and NW 135th Street; NW 127th Street between Cairo Lane and NW 32nd Ave.

B. The project proposes the installation of an HDPE corrugated pipe ranging in size between 15-inch to 24-inch, the installation of ten (10) stormwater catch basin

structures, repairing of damaged existing catch basin structures and installation of cartridge-based stormwater treatment structure. The project would involve installation of rip-rap at stormwater outfall embankment, installation for new pipeline including excavation and backfill, pavement restoration and pavement markings.

C. Additionally, the project proposes the installation of approximately 145 LF of 3-inch HDPE force main pipe, the installation sanitary service connections, and a connection to an existing 16-inch DIP force main. The project would involve installation of adjusting rim elevation of existing valves to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

D. The project also proposes the installation of two (2) fire hydrant assemblies for the water system, repairing or replacing any damaged existing fire hydrants, and repairing or replacing any damaged existing water meters. The project would involve installation of adjusting rim elevation of existing valves and water meter boxes to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

E. It is the intent of the City to obtain a complete and working installation under this Project and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.6 PROJECT BACKGROUND

On May 2015, a Design-Build project was awarded by the City to Intercounty Engineering Inc. where the original design included improvements to the water, wastewater, stormwater systems and roadway reconstruction at Cairo Lane, NW 127th Street and sections of Alexandria Drive. The construction began in February 2016 but was stopped in July 2019.

During this period, fir the stormwater system the contractor achieved the installation of 85% of the planned infrastructure, consisting of eighteen (18) catch basins and 1,226 LF of trunk drainage pipping along Cairo Lane, as well as thirteen (13) catch basins and 1,987 LF of trunk drainage pipping along NW 127th Street. The remaining 15% of the planned improvements are pending primarily in Cairo Lane, where two (2) catch basins and 1,546 LF of drainage pipelines from the original design await installation.

Additionally, for the wastewater improvements the contractor achieved only 65% of the planned infrastructure leaving 35% of the proposed improvements pending. Approximately 967 LF of 3-inch HDPE force main was installed along Alexandria Drive with only the service connections pending and approximately 2,449 LF of 3-inch HDPE force main was installed along Cairo Lane, leaving the interconnection to the 16-inch CIP force main pending as well as the installation of the service lines.

For the water system improvements, the contractor achieved the installation of 100% of the water distribution pipelines and seven (7) fire hydrants, which represents almost the

entirety of the proposed system. The remaining improvements are pending primarily on NW 127th Street, where to (2) fire hydrant await installation.

The roadway reconstruction pertained to the last stage of the project, the entirety of these improvements is still pending.

1.0.7 WORK COVERED BY CONTRACT DOCUMENTS

A. Following receipt of Notice to Proceed with the work, the Contractor shall notify the Engineer at least ten (10) days before he/she is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing facilities. Any control modifications to the existing facilities shall not be made without first obtaining written permission form the Engineer and the City.

C. Critical events in the sequence of construction are specified herein. The outline sequence of construction does not include all items necessary to complete the work but is intended to identify the sequence of critical events necessary to minimize disruption to the ongoing operation. The sequence of construction is a precedence requirement and does not attempt to schedule the Contractor's work. It is intended only to indicate which activities must precede other activities in order to minimize interference and disruptions.

D. The existing facilities shall be maintained in an operable condition by the Contractor during construction, as indicated in the sequence of construction. All work by the Contractor that disrupts the normal operations shall be shown on the Construction Schedule and specifically scheduled with the City's staff. The schedule notification shall consist of a written notice defining the work to be accomplished, the function that will be interrupted, the duration of the interruption, and the mitigation effort to be performed by the Contractor to maintain systems capacity continuously. The written notice shall be submitted to the City fourteen (14) days in advance of the proposed work and the City will respond to the Contractor in writing within seven (7) days of receipt of the notice regarding the acceptability of the proposed plan.

1.0.8 SEQUENCE OF CONSTRUCTION

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned

specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

   a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

   b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to any excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.**

11. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

12. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

13. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

14. The general sequence of work shall be as follows:

1) Phase I – Mobilization

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:
Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 5 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 6 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 7 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 8 At Cairo Lane

At STA. 12+85.40±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 9 At Cairo Lane

At STA. 14+09.55±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 10 At Cairo Lane

At STA. 16+29.36±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 11 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 12 At Cairo Lane

At STA. 17+17.51±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 13 At Cairo Lane

At STA. 17+37.10±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

At STA. 18+16.42±:

Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 15 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 16 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 17 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 23 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 24 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 25 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 26 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 27 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 28 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 29 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 30 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 31 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 32 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 34 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 35 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 36 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 37 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 38 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 39 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 40 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

C. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01011 SITE CONDITIONS

PART 1 – GENERAL

1.0.1. SITE INVESTIGATION

A. The Contractor acknowledges that he has satisfied them as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation: disposal, handling and storage of materials; availability of labor, water, electric power, roads; disposal of water from construction; uncertainties of weather; the conformation and conditions of the ground; the type of equipment and facilities needed preliminary to and during the prosecution of work and all other matters which can in any way affect the work or the cost thereof under this contract.

B. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City included with these contract documents. Any failure by the Contractor to acquaint the City or them with all the available information will not relieve them from the responsibility for properly estimating the difficult or cost thereof under this Contract.

C. The Contractor acknowledges that by personal field observation or other means satisfactory to himself, performed prior to the bid, he has included in the prices bid all costs for dealing with all construction problems create by observable above or on grade features on or adjacent to the site of the site of the work whether or not these features are shown on the plans or described in the specifications. In instances where the observable features indicate subsurface conditions which may affect the project work, as for example, a pavement patch or catch basin gratings indicating respectively a utility or storm sewer not shown on the plans, the Contractor acknowledges that he has made timely, diligent, inquiry of the Engineer or by other means fully satisfied themselves prior to the bid as to the nature of, and costs created by, the subsurface condition and included all costs therefore in the prices bid.

1.0.2. SITE CONDITIONS

A. All information obtained by the City regarding the site conditions, topography, subsurface information, groundwater contamination, groundwater elevations, existing construction of site facilities as applicate, and similar data will be made available for inspection at the office of the Engineer upon request. Such information is offered as advisory information only. Neither the Engineer nor the City assumes any responsibility for the completeness of, or for the Contractor's interpretation of, such advisory information. Prior to bidding and after written approval from the City, bidder shall make his own investigations to satisfy themselves with site conditions at their own cost.

B. Surface investigations, including test borings, have been made to indicate subsurface conditions at locations in the project.

C. Prospective bidders are advised, at their own expense, to make such subsurface investigation, by boring or test hole excavation, as may be desirable. However, such work shall be scheduled by appointment with the Engineer if for a City site or by notification to the City and property permitted if in the public right of way.

1.0.3. DIFFERING SUBSURFACE CONDITIONS

A. In the event Subsurface or latent physical conditions are found materially different from those indicated in these documents and differing materially from those ordinarily encountered and generally recognized as inherent in the character of work covered in these project documents, promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

B. The Engineer will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer finds that such conditions do so materially differ as to cause an increase or decrease in cost and time considered reasonable by the Engineer, the City will make the final decision regarding any adjustment in cost or time for completion.

C. In the event that site conditions differ from those expected by the Contractor, the Contractor shall proceed to complete the work as contemplated by the plan and specifications on his own cost and expense. If in the discretion of the Engineer, the difference in site conditions renders completion of the work as described by the plans and specifications impossible, the Engineer may alter the work, whereupon the Contractor shall be compensated for any extra work pursuant to “Extra Work and Payment therefore” of the special conditions; the Engineer shall no alter the work where the site conditions render the work more difficult or costly to perform, if such work is otherwise still possible as described in the contract documents.

1.0.4. EXISTING UTILITIES AND LOCATION SERVICES

A. Known utilities and structures adjacent to or encountered in the work are shown on the drawings. The locations shown are taken from existing records and the best information available from the existing plans; However, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Engineer or the City for their accuracy or completeness.

B. **No request for additional compensation or Contract time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the work shall rest solely with the Contractor.**

C. Prior to proceeding with excavation, the Contractor shall contact all utility companies and all other users of the right of way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three (3) normal working days before starting construction. The Contractor shall proceed with caution in the excavation and preparation so that the exact location of underground utilities may be determined.

D. It is the responsibility of the Contractor to ensure that all utility or other existing facilities, the stability of which may be endangered by the close proximity of excavation, are temporarily held in position while work proceeds in the vicinity of the facilities and that the utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

E. The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, the Contractor shall immediately notify the responsible official of the organization operating the interrupted utility. The Contractor shall lend all possible assistance in restoring services and shall assume all cost, charges, or claims connected with the interruption and repair of such services, as determined by the City.

1.0.5. CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

A. Where the Contractor's operation could cause damage or inconvenience to railway, telephone, fiber optic, television, electrical power, oil, gas, water, sewer, irrigation system, or any other utility, public or private, the Contractor shall make all arrangements necessary for the protection of these utilities and services.

B. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities and utility poles where necessary. **Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines whether shown on the plans or not.**

The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

C. The Contractor and his Subcontractor shall be solely and directly responsible to the Owners and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this contract.

D. Neither the City nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractors failure to protect utilities encountered in the work.

E. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any utility service be allowed unless granted by the Owner of the utility.

F. In the event water service lines that interfere with construction are encountered, the Contractor may, by obtaining prior approval of the water utility, cut the service, dig through, and restore the service with similar and equal materials at the Contractor's expense and as approved by the Engineer.

G. Replace, with material approved by the Engineer, at Contractor's expense, any and all other laterals, existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents and as approved by the Engineer.

1.0.6. INTERFERING STRUCTURES

A. Take necessary precautions to prevent damage to existing structures whether on the surface, above ground, or underground. An attempt has been made to show major structures on the plans. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and is presented as a guide. The Contractor is solely responsible for field verification of all information provided and to determine the type, location, elevation and extent of any utilities which may not have been shown on the plans.

1.0.7. FIELD RELOCATION

A. During the process of construction, it is expected that minor relocations of the work may be necessary. Such relocations shall be made only by the direction of the Engineer at the Contractor’s expense. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in

order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor fails to notify the Engineer when an existing structure is encountered, and proceeds with the work despite this interference the Contractor does so at his own risk.

B. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the specifications and the permitting documents.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01015 INDEX OF DRAWINGS

PART 1 – GENERAL

1.0.1. PLANS BY THE CITY

A. Plans dated December 2022 and any subsequent revision, thereto, introduced by Addenda prior to bid, showing this work, are hereby made a part of the Contract Documents, and are **listed** as follows:

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		TITLE SHEET,
G-02		GENERAL NOTES
G-03		NOTES AND LEGENDS,
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-02		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-03		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-04		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-05		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-06		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-07		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

C-08	PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-09	STANDARD DETAILS (WATER SYSTEM)
C-10	STANDARD DETAILS (WATER SYSTEM)
C-11	STANDARD DETAILS (WATER SYSTEM)

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		GENERAL PLAN & NOTES
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE CAIRO LANE
C-02		PLAN AND PROFILE CAIRO LANE
C-03		PLAN AND PROFILE CAIRO LANE
C-04		PLAN AND PROFILE CAIRO LANE
C-05		PLAN AND PROFILE CAIRO LANE
C-06		STANDARD DETAILS
C-07		STANDARD DETAILS

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		KEY SHEET
G-04		POLLUTION PLAN CAIRO LANE
G-05		POLLUTION PLAN NW 127TH ST
CIVIL		
C-01		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-02		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-03		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-04		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-05		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-06		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-07		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-08		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-09		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-10		ROADWAY PLAN NW 32ND AVE
C-11		CROSS SECTIONS - CAIRO LN
C-12		CROSS SECTIONS - CAIRO LN

C-13	CROSS SECTIONS - CAIRO LN
C-14	CROSS SECTIONS - CAIRO LN
C-15	CROSS SECTIONS - CAIRO LN
C-16	CROSS SECTIONS - NW 127TH STREET
C-17	CROSS SECTIONS - NW 127TH STREET
C-18	CROSS SECTIONS - NW 127TH STREET
C-19	CROSS SECTIONS - NW 127TH STREET
C-20	TYPICAL CROSS SECTIONS
C-21	TYPICAL CROSS SECTIONS
C-22	STANDARD DETAILS
C-23	STANDARD DETAILS
C-24	STANDARD DETAILS
C-25	STANDARD DETAILS
C-26	EROSION CONTROL NOTES & DETAILS
C-27	STORMWATER POLLUTION PREVENTION PLAN
C-28	STORMWATER POLLUTION PREVENTION PLAN
C-29	STORMWATER POLLUTION PREVENTION PLAN
C-30	STORMWATER POLLUTION PREVENTION PLAN
C-31	STORMWATER POLLUTION PREVENTION PLAN
C-32	SIGNING AND PAVEMENT MARKINGS
C-33	SIGNING AND PAVEMENT MARKINGS
C-34	SIGNING AND PAVEMENT MARKINGS
C-35	SIGNING AND PAVEMENT MARKINGS
C-36	SIGNING AND PAVEMENT MARKINGS
C-37	MAINTENANCE OF TRAFFIC PLANS NOTES AND DETAILS

B. **Due to the possibility of typing errors or omissions, the above list shall not be considered as necessarily complete, nor shall the City Standard Details which may be included elsewhere herein be considered as forming a complete listing of all City Standard Details which may apply to this Project. Perform all work shown on all sheets of the Plans, as specified herein or necessary for a complete functional installation and no extra compensation will be made due to the omission or incorrect listing of a Drawing in this Section. All City Standard Details are incorporated in these Contract Documents by reference and all work shall be performed in accordance with all applicable City Standard Details.**

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01016 SAFETY REQUIREMENTS, HURRICANES PREPAREDNESS AND PROTECTION OF PROPERTY

PART 1 – GENERAL

1.0.1. CONTRACTOR'S RESPONSIBILTY FOR SAFETY

A. Conduct whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the contract period. This requirement shall apply continuously and not be limited to normal working hours.

B. The Contractor shall be in compliance with all applicable provisions of the Occupational Safety and health Act of 1970. The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for his review before "Notice to proceeded" will be issued.

C. Neither the professional activities of the design professional, nor the presence of the design Professional nor his or her employees and subconsultants at a construction site, shall relieve the Contractor and any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequence techniques or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the project documents and any health and safety precautions required by any regulatory agencies.

1.0.2. FEDERAL STATE AND LOCAL SAFETY REQUIEREMENTS

A. Safety provisions shall conform to the federal and state Departments of labor Occupational Safety and Health Act (OSHA), and all other applicable federal, State, County, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these project Documents. Where any of these are in conflict, the more stringent requirements shall be followed. Contractor's failure to thoroughly familiarize with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

B. All excavations made in the earth shall be performed in compliance with the State of Florida Trench Safety Act, OSHA 29 CFR 1926 Subpart P (Chapter 90-96, Laws of Florida). The Contractor shall appoint a *competent person*, in accordance with subpart P, who shall be present at the jobsite. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

C. The Contractor shall be familiar with the “Underground facility Damage” Prevention and safety Act” Florida Statute 556. The Contractor shall contact the Sunshine State One Call of Florida, at 01-800-432-4770 or by submitting an internet ticket entry via www.sunshine811.com) at least 48 hours prior the excavation. Failure to familiarize himself with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

D. Conduct operations in such a manner utilizing warning devices, such as traffic cones, barricades and warning lights that traffic, pedestrian and City personnel are given adequate warning of hazards of the worksite as may be deemed necessary by the City, Engineer of Record, and governing agency having jurisdiction over the work or political subdivision.

E. The Contractor shall be in compliance with all applicable provisions of the OSHA Code of Federal Regulations (CFR), including, but not limited to, the following:

1. 29 CFR Part 1910 Subpart D - Walking-Working Surfaces
2. 29 CFR Part 1910 Subpart G - Occupational Health and Environmental Control
3. 29 CFR Part 1910 Subpart H - Hazardous Materials
4. 29 CFR Part 1910 Subpart I - Personal Protective Equipment
5. 29 CFR Part 1910 Subpart J - General Environmental Controls
6. 29 CFR Part 1910 Subpart N - Materials Handling and Storage
7. 29 CFR Part 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment
8. 29 CFR Part 1910 Subpart Q - Welding, Cutting and Brazing
9. 29 CFR Part 1910 Subpart S – Electrical
10. 29 CFR Part 1910 Subpart T - Commercial Diving Operations
11. 29 CFR Part 1910 Subpart Z - Toxic and Hazardous Substances
12. 29 CFR Part 1926 Subpart E - Personal Protective and Life Saving Equipment
13. 29 CFR Part 1926 Subpart H - Materials Handling, Storage, Use, and Disposal
14. 29 CFR Part 1926 Subpart I - Tools - Hand and Power
15. 29 CFR Part 1926 Subpart J - Welding and Cutting

16. 29 CFR Part 1926 Subpart K – Electrical

17. 29 CFR Part 1926 Subpart L – Scaffolds

18. 29 CFR Part 1926 Subpart M - Fall Protection

19. 29 CFR Part 1926 Subpart P – Excavations

20. 29 CFR Part 1926 Subpart Q - Concrete and Masonry Construction

21. 29 CFR Part 1926 Subpart S - Underground Construction, Caissons, Cofferdams, and Compressed Air

22. 29 CFR Part 1926 Subpart Z - Toxic and Hazardous Substances

23. 29 CFR Part 1926 Subpart AA - Confined Spaces in Construction

24. 29 CFR Part 1926 Subpart CC - Cranes and Derricks in Construction

F. In addition, the Contractor shall adhere to any other applicable Federal, State and Local Safety and Health Regulations involving General industry and/or Construction Standards not mentioned in the Specifications.

G. For trench excavations in excess of five (5) feet in depth, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," the "Trench Safety Act" section of the Quotation, and Section 6.01 "Excavation."

H. The Contractor shall comply with the provisions of Florida Statutes Chapter 556, "Underground Facility Damage Prevention and Safety Act." The Contractor shall contact Sunshine 811 by calling 811 or 1-800-432-4770, or by submitting an internet ticket entry via www.sunshine811.com, at least forty-eight (48) hours prior to any excavation. Failure to familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and the penalties set forth herein.

I. All open excavations made in the earth shall be performed in compliance with OSHA 29 CFR Part 1926 Subpart P - Excavations, and Florida Statutes Chapter 553, Part III, "Trench Safety Act." The Contractor shall appoint a "competent person," in accordance with Subpart P, who shall be present at the job site. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

1.0.3. SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

A. The Contractor shall at all time provide proper facilities for safe access to the work by authorized government officials.

1.0.4. CONSTRUCTION SAFETY PROGRAM

A. Develop and maintain for the duration of the project, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor's Manual of Safety practices outlining the firms policies on field safety procedures for employees shall be submitted to the Engineer for review before "Notice to Proceeded" will be issued. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

B. Certain products specified in these specifications contain warnings by the manufacturers that under certain conditions, if instructions for use are not followed, a hazardous condition may exist. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.

C. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's Safety Supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

1.0.5. SAFETY EQUIPMENT

A. As part of the safety program, maintain at an office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and stablish the procedure for the immediate relocation to a hospital or a doctor's care of any person who may be injured on the jobsite.

B. Perform all necessary work to protect all personnel and the general public from hazard, including, but not limited to, surface irregularities or unramped grade changes, and trenches or excavations. Furnish barricades, lanterns, and proper signs to safeguard all persons and work.

C. There shall be no oil dripping from equipment or oil spills.

D. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags, and remnants of the material in a manner approved by the City of Environmental Resources Management at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM, and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

E. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, logging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.

F. During construction, construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railings, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards. All such barriers shall have adequate warning lights as necessary, or required, for safety.

1.0.6. STORAGE OF HAZARDOUS MATERIALS

A. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags and remnants of the material in a manner approved by the Department of Environmental Resources Management (DERM) at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

B. The Contractor is hereby cautioned that he cannot store any environmentally hazardous materials such as solvents, greases, lubricants or any other type of chemical substances at the Pump Station site. The Contractor shall be allowed to keep only such materials at the site for immediate use.

1.0.7. ACCIDENT REPORTS

A. If death, serious injuries, or series damage are caused, report the accident immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer and the City all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

B. If a claim is made by anyone against the Contractor or any Subcontractor on account of any accident, promptly report the facts in writing to the Engineer and the City, giving full details of the claim.

1.0.8. FIRE PREVENTION AND PROTECTION

A. Perform all work in fire-safe manner. Furnish and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.0.9. HURRICANE PREPAREDNESS

A. During such periods of time as are designated by the United States Weather Bureau as being a hurricane alert, the Contractor shall perform all precautions as necessary to safeguard the work and property, including the removal of all small equipment and materials from the site, lashing all other equipment and materials to each other and to rigid construction, and any other safety measures as may be directed by the Engineer.

B. During the hurricane season, which runs from June 1st to November 30th, it may become necessary to suspend work due to an impending storm until the proper working conditions prevail. In the event of a tropical storm or hurricane, it is the Contractor's responsibility to secure the jobsite in anticipation of the storm.

C. Fifteen (15) days prior to beginning of construction, the Contractor shall submit to the City or designee a Hurricane Preparedness Plan. The plan shall outline the necessary measures that the Contractor proposes to perform in the event of a tropical storm or hurricane in order to protect all work, materials, and equipment from exposure and properly safeguard all components of the project.

D. Prior to the Start of Work: The Contractor shall submit for approval, a plan of action for the specific actions to be taken on this specific project during a hurricane warning. The Contractor shall ensure operation of the by-pass system, if applicable, during the storm event. Backup power shall be included in case of power failure from FPL, as needed.

E. Upon notification of Hurricane Watch:

1. Formal notification to all Contractors to prepare and submit for approval a Plan of Action for the specific actions to be taken on their particular projects.

F. Upon notification of a Hurricane Warning:

1. Formal notification to the Contractors to implement their approved plan of action to protect the project and the public.

2. For pipeline construction projects within the public right-of-ways, the Contractor will be notified by the Construction Manager Office to suspend his construction operations. The Contractor will backfill all open trenches, remove all construction equipment and materials from the right-of-way, remove unnecessary traffic barricades and signs, secure remaining barricades by "half burial" or "double sandbags".

G. Post Disaster Work: In the event of a disaster declaration by the local or state governing authorities, the City may choose to obtain the services of the Contractor to perform work made an imminent priority for the disaster event. The compensation for the additional work caused by the disaster shall be negotiated between the Engineer

and the Contractor with written approval provided by both parties prior to mobilization at the designed location or locations. The value of the work performed shall be up to the original contract with contingencies and dedicated allowances.

1.0.10. JOINT SURVEY TO ESTABLISH AUTHENCITY OF POSSIBLE DAMAGE CLAIMS

A. The Contractor shall maintain vertical and horizontal survey control points on all structures and improvements, located in the vicinity of the work prior to beginning work, and shall periodically check the points for movements with copies provided to the Engineer, of the survey notes for each survey and a copy of the layout of the survey control points.

B. After the contract is awarded and before commencement of work, the Contractor shall perform a thorough examination of existing buildings, structures and other improvements in the vicinity of the work, as applicable, which might be damaged by his operations.

1. Examinations of existing structures, buildings, and other improvements in the vicinity of the work shall be done by the Contractor. The scope of the examination shall include cracks in the structures, settlement, leakage, and similar conditions. The City assumes no responsibility for pre-existing conditions of the structure.

2. Records in triplicate of all observations shall be prepared by the Contractor, photographs shall be taken by the Contractor signed and dated, with descriptive information and in the manner specified above. One signed copy of every document and photograph will kept on file in the office of the Engineer. Video recording also required.

3. The above records are intended to be used as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and are for the protection of the Contractor and the City, and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work.

C. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such detective pavement exist prior to proceeding with any work in the vicinity. Preconstruction videos and digital pictures shall be taken with date stamps of the entire area of work. A copy of all such notices shall be forwarded to the City.

1.0.11. TRAFFIC – GENERAL

A. Traffic safety and traffic control devices shall eb employed on all private and public construction work withing the public right-of-way. Such measures shall be established

and provided in conformance with the following regulations and in conformance with the Miami-Dade County Public Works Manual.

B. For construction within the City's public right-of-way, the Contractor shall submit two sets of construction plans for review to the City of Opa-Locka Public Works Department.

C. All traffic control and warning devices so specified shall, unless otherwise specified by the City be furnished, installed according to the Miami-Dade County Public Works Manual, Part I, Standard Details traffic control and safety by an Uniformed Police Officer, when specified, shall by furnished by the Contractor.

D. The Contractor shall take necessary precautions to ensure complete protection to public health, welfare, and safety. Adequate protection and warning devices shall be placed at locations surrounding work areas to prevent injuries to public properties. Particular emphasis must be placed on safety devices for vehicular traffic. Any work areas that may create a hazard at night shall be well lighted form sunset to sunrise with lamps or lanterns visible from all approaches. All maintenance of traffic signals must be approved by the City.

1.0.12. TRAFFIC SAFETY AND ACCESS TO PROPERTY

A. Comply with all rules and regulations of the City, state, and County authorities regarding closing or restricting the use of public streets or highways. No public or private roads shall be closed, except by express permission of the City and the controlling authority. Conduct the work to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved barricades, signs, and lights where necessary for the safety of the public. The convenience of the general public and residents and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.

B. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over. Temporary access driveways must be provided where required. Access to businesses, schools and homes along the route of the work shall always be provided by the Contractor.

C. Supply flagmen and guards or Police when they are required by regulation, when deemed necessary for safety, or required by the Engineer. Flagmen and Guards shall be furnished with approved orange wearing apparel and other regulation traffic control devices.

D. The Contractor shall be responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the

detour route) traffic control and other provisions, throughout the project as required by the City.

E. Traffic shall be maintained according to corresponding typical traffic control details. No streets shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

1.0.13. TRAFFIC CONTROL AND USE OF PUBLIC STREETS

A. The Contractor shall be responsible for traffic control as specified hereinafter. Any reference to the City, its departments, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over particular areas of streets or their departments, published regulations, permits, or data. Abide by all applicable laws, regulations and codes thereof, pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

B. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control and other provisions, throughout the project as required by the City of Opa-locka Public Works Department. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the Miami Dade County Public Works Manual. No street shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

C. If required by the Traffic Division, employ the required number of uniformed off-duty policemen to maintain and regulate the flow of traffic through the construction area. The number of men required and the number of hours on duty necessary for the maintenance and regulation of the traffic flow shall be subject to their approval. If required for traffic control permits or agencies, the Contractor shall work odd or night hours, as required for traffic control reasons, and the cost of such work shall be considered as incidental to construction.

D. The Contractor shall provide all barricades and/or flashing warning lights necessary to warn motorist of the construction throughout the project.

E. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times. Provide necessary access to all adjacent property during construction.

F. The contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Miami Dade County Public Works Manual. In addition, provide for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, attention is directed to the fact that vehicle loop detectors may have been embedded in the pavement. Verify these locations by inspecting the site of the work and by contacting the Sunshine 811, at 1-800-432-4770, (or by submitting an internet ticket entry via www.sunshine811.com). Any loop detector which is damaged, whether shown on the plans or not, shall be repaired or replaced to the satisfaction of the Traffic Division.

H. Notify the Traffic Division 24 hours in advance of the construction date, and 48 hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed and the swale or median area restored to their previous condition.

1.0.14. WORKING IN CONFINED SPACES

A. Where a Contractor needs to work in a confined space, the Contractor must comply with the General Industry, OSHA Confined Space Standard, 29 CFR 1910.146 or the equivalent Confined Space Standard in CFR 1926, Safety and Health Regulations for Construction Standards.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01018 ENVIRONMENTAL CONTAMINATION

PART 1 – GENERAL

1.0.1. ENVIRONMENTAL CONSIDERATINOS

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP and Miami-Dade County Regulatory and Environmental Resources Department.

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both the City and other authorities with jurisdiction. The Field Health and Safety Technician furnished by the Certified Industrial Hygienist or Environmental Engineer shall be present on the site during all construction in specialized construction areas unless the nature of the work is non-hazardous such that either the Site Specific Health and Safety Plan or the Certified Industrial Hygienist or Environmental Engineer authorizes his absence.

C. Disposal of any contaminated soils and/or groundwater must comply with all applicable federal, state and local requirements.

PART 2 – PRODUCTS

2.0.1. The Engineer of Record shall consult with the City regarding its requirement for material type (including pipe, fitting, gasket, valve interior coating, and the like) to be installed in contaminated areas.

PART 3 – EXECUTION

3.0.1. INSTALLATION REQUIREMENTS

A. The requirements of this Section shall be closely adhered to in all cases where proposed mains are to be installed in an area of hydrocarbon contamination. These requirements and those imposed by Miami-Dade County Regulatory and Environmental Resources Department or any other agency having jurisdiction an addition to, and take precedence over the City's standard specifications and standard details for ductile iron mains.

B. Contaminated backfill cannot be placed back into an existing trench. Contaminated fill shall be replaced with clean fill, hauled offsite and legally disposed of at a location which can handle the material.

C. The City may require gasketed joints be protected by encasing the entire joint with a hydrocarbon impermeable material. In this case, all joint gaskets shall be protected including those on pipe, fittings, valves, fire hydrants and specialty items.

END OF SECTION

01025 MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Payment for the various items in the Schedule of Payment items, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, taxes, materials, commissions, transportation and handling, bonds, permit fees, insurance, overhead and profit, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work, all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). Such compensation shall also include payment for any loss or damages arising directly or indirectly from the work.

B. The Contractor's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Schedule of Payment items or this Section, it shall include the cost for that work in some other applicable bid item, so that its proposal for the project does reflect its total price for completing the work in its entirety.

1.0.2. SUBMITTALS

A. Informational:

1. Schedule of Values: Submit schedule on City's form.

2. Application for Payment.

3. Final Application for Payment.

B. Submittals shall be in accordance with Section 01300 “Submittals” and the City’s standards.

1.0.3. SCHEDULE OF VALUES

A. Prepare a schedule of values for the work.

B. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.

C. Lump Sum Work:

1. Reflect schedule of values format included in conformed Bid Form.

2. List Bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.

D. An unbalanced or front-end loaded schedule will not be acceptable.

E. Summation of the complete schedule of values representing all the work shall equal the Contract Price.

F. The Contractor shall submit a Schedule of Values for review with the return of the executed Agreement to the Owner. The schedule shall contain the installed value of the component parts of work for the purpose of making progress payments during the construction period.

G. The schedule shall be given in sufficient detail for proper identification of work accomplished. The Schedule of Values shall directly correlate to each activity outlined in the construction progress schedule and the construction network analysis (specified in the section entitled "Submittals") to accurately relate construction progress to the requested payment. Each item shall include its proportional share of all costs including the Contractor's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.

H. If the Contractor anticipates the need for payment for materials stored on the project site or off-site in bonded warehouse, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the work items in the Schedule of Values. Payment for stored materials shall comply with requirements of General Conditions.

1.0.4. APPLICATION FOR PAYMENT

A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.

B. Use detailed Application for Payment Form provided by the City.

C. Include accepted schedule of values for each portion of work and the unit price breakdown for the work to be paid on unit price basis, and a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.

D. Preparation:
1. Round values to nearest dollar.

2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form.

3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand as applicable, and such supporting data as may be requested by Owner.

1.0.5. MEASUREMENT—GENERAL

A. Weighing, measuring, and metering devices used to measure quantity of materials for work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

B. Whenever pay quantities of material are determined by weight, material shall be weighed on scales furnished by Contractor and certified accurate by state agency responsible. Weight or load slip shall be obtained from weigher and delivered to the City or City's representative at point of delivery of material.

C. If material is shipped by rail, car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.

D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by the City. Each vehicle shall bear a plainly legible identification mark.

E. Materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.

F. Where measurement of quantities depends on elevation of existing ground, elevations obtained during construction will be compared with those shown on drawings. Variations of 1 foot or less will be ignored, and profiles shown on drawings will be used for determining quantities.

G. Units of measure shown on Bid Form shall be as follows, unless specified otherwise. All methods of measurement shall be approved by the City.

Item	Method of Measurement
AC	Acre – Field Measure
CY	Cubic Yard – Field Measure within limits specified or shown, or measured in vehicle by volume, as specified
EA	Each – Field Count
GAL	Gallon – Field Measure
HR	Hour
LB	Pound(s) – Weight Measure by Scale
LF	Linear Foot – Field Measure
LS	Lump Sum – Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
TON	Ton – Weight Measure by Scale (2,000)

1.0.6. MEASUREMENT AND PAYMENT

A. General:

1. Payment for all the work completed under this Project shall be made in accordance with the provisions of the "Special Conditions" on the basis of the specific provisions of this section of the Specifications.

2. DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.

3. The Contractor will be paid each month the value of the work completed during the preceding month (less retainage) and the invoiced cost including applicable sales taxes and shipping value (less retainage) of materials not already used, but which have been furnished by the Contractor under the Specifications, provided that such materials have been delivered, properly stored and inspected by the Engineer and that payment therefore has been satisfactorily certified by the Contractor to the Engineer. Remaining cost for materials (less retainage) will be paid at the same time as installation. Any payment for materials which are not used will be withheld from the final payment.

4. The Contractor shall receive and accept the compensation as provided in the Quotation, the ITB and "Invoices and Payments" of the "Special Conditions" as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the City.

5. The cost breakdown (or Schedule of Values) referred to herein is defined in "Schedule of Values" of the "Special Conditions." The cost breakdown (Schedule of Values) approved by the Engineer will be used as the basis for making progress payments and for determining the cost of extra work which is the same or similar (as determined by the Engineer) to that defined in the "Schedule of Values."

6. The prices stated in the Quotation includes full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.

7. Unless otherwise specifically stated elsewhere herein, the Contractor shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment and/or systems supplied by either the City or the Contractor and installed as a part of this Project. Further, any test materials supplied by the Contractor shall be completely satisfactory to the City. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the Engineer whose decision shall be final. Any material considered not suitable shall be immediately replaced by the Contractor with suitable material and no extra compensation will be allowed."

8. It is the intent of the City to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

9. For purposes of determining the monthly payments to be made to the Contractor for work accomplished, the value of the work completed shall be determined in the following manner:

    a. Excavation, installation of pipe, fittings, valves, catch basins, treatment structure, completed backfill, connection to existing mains and temporary paving repairs shall constitute seventy-five percent **(75%)** of the price bid for these Quotation Items.

b. Submittal of the PSM's daily progress reports and/or field book notes and monthly as-builts of the work that has been performed to date (all documents subject to approval and acceptance by the City) shall constitute ten percent **(10%)** of the price bid for these Quotation Items.

c. Completion of all sitework restoration, shall constitute five percent **(5%)** of the price bid for these Quotation Items.

d. Submittal of the final as-builts to the satisfaction of the Engineer, completion of all surface repairs, restoration of public or private facilities, appurtenances, and all other work not provided for under other Quotation Items shall constitute the remaining ten percent **(10%)** of the price bid for these Quotation Items.

B. Price Bid:

1. The price bid for each item shall be stated in both words and figures in the appropriate places in the Quotation form. All blank spaces for bid prices must be filled in with ink, or with a typewriter. The Bidder is further directed that any and all alterations, changes, corrections and modifications, made to the Quotation forms prior to submission of bids, must be initialed by the Bidder. Non-compliance by the Bidder of this directive may be grounds for rejection of his bid.

2. In the event that there is a discrepancy between the price written in words and the price written in numbers, the price written in words shall govern except where the number of units multiplied by the unit price shown in numbers equals the total price for that bid item. In such case the unit price shown in numbers shall govern over the unit price shown in words.

3. Where an error is made in the calculation of the total bid price of an item, the unit price shall govern.

4. If the bidder makes an error in his addition of the total bid prices of the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

5. It has been determined that the City is not exempt from the payment of Florida State Sales Tax under this Contract. All items of materials, equipment and supplies furnished by the Contractor and remaining a part of the completed Project are subject to this Tax. The Bidder shall include a sufficient amount of money to pay for this Tax in his bid price. Sufficient money to pay the Tax for all miscellaneous materials and minor items shown on the Plans, specified herein, or necessary for the work, and which will remain a part of the completed Project, shall also be included in the price or prices bid, and no other compensation will be provided.

C. Quotation Items:

It is intended that all work required to complete this Project will be included in the various bid items as follows:

Item No. 1

For performing preparatory work and operations in mobilizing for beginning the work of the Project, including preparation and acceptance of Maintenance of Traffic Plan (MOT), but excluding materials and permit costs, both of which are paid under other payment items, shall include, but not be limited to; preparation, submission and acceptance of the MOT, first by the City and if acceptable to the City, submission to and acceptance by all other governing authorities; supply, submission and correction of all "Pre-Approved Product Lists" and/or shop drawings; ordering the said equipment and materials in a timely fashion; those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities; the cost of reestablishing the design baseline, vertical control points and reference points, and establishing proposed pipeline location; the cost of MOT and permit preparation/submission/acceptance; the costs of bonds, required insurance and other preconstruction expense but excluding the actual cost of permits, which are paid under a separate dedicated allowance account and excluding the cost of materials which are paid under another bid item(s).

Not inclusive of the costs incurred in the provision of traffic control and the costs incurred in the provision of off-duty police officers that are to be paid for under separate Bid Items.

The mobilization item will be paid in the following manner:

Contracts with a contract duration of up to and including one hundred twenty (120) calendar days will be paid in two (2) separate payments, each equal to fifty (50) percent of the amount bid for this item.

Contracts with a contract duration of over one hundred twenty (120) calendar days will be paid in four (4) separate payments, each equal to twenty-five (25) percent of the amount bid for this item.

The two or four payments will be made with the first two or four payment draws and is conditioned upon progress satisfactory to the Engineer being made pursuant to the accepted Project.

The total amount of the partial payments may not exceed ten (10) percent of the original Subtotal of the bid items. Any remaining amount will be paid upon completion of all work on the Contract. Retainage, as specified in the "General Covenants and Conditions" and any Special Provisions will apply to these payments.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Items No. 2

For furnishing and constructing Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping the main; furnishing and installing pipe and fittings, including cutting and threading as required; gate valves; valve box and cover set in concrete; constructing concrete support slabs, installing guard post and Fire Hydrants; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 3

For demolishing and removal of damaged Fire Hydrant Assemblies for water mains as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. Such amount represents the amount the Contractor feels is necessary to completely demolish the damaged Fire Hydrant Assemblies.

Items No. 4

For adjusting rim elevation of existing water meter boxes to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 5

For adjusting rim elevation of existing water valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full

compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 6

For adjusting rim elevation of existing water ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 7 and 11

For furnishing and delivering to the City HDPE pipe and pipe fittings for sewer force main of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 8 and 12

For installing HDPE pipe and pipe fittings for sewer force mains of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the

job site (trench side) and placing them into position in the trench; installing HDPE pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Item No. 9 and 10

For making a connection to an existing sewer force main at:

NW 135th Street (STA 43+88±)

Including furnishing and installing all fittings necessary for tapping sleeve connection to existing sewer force main, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of City forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to, exploratory excavation to verify the main size; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping sleeve connecting the proposed sewer force main to the existing main; furnishing and installing any required pipe and fittings; installing solid sleeves; making thrust restrained joints; furnishing all materials and equipment required to clean and test the connection; cleaning and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with City forces; field locating utilities; protecting existing utilities; satisfying permit conditions; bypass pumping and/or sewer tankering of sewer flows interrupted during the sewer force main connection procedure, if required; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 13

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 14

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 15

For furnishing and delivering to the City HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 16

For installing HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each

complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 17

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 18

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 19

For furnishing and delivering to the City flushing valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of flushing valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing flushing valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs;

and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 20

For installing flushing valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing flushing valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 21

For furnishing and delivering to the City Automatic Air Release Valve Assemblies (AARVs) for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ARV valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing ARVs; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 22

For constructing Automatic Air Release Valve Assemblies (AARVs) for sewer force mains at the locations shown on the plans, or where directed by the Engineer in the field, complete as shown in the Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; furnishing and installing automatic air release valves, corporation stops, saddles, bronze couplings, stainless steel ball valves, including cutting and threading as required, manhole frames and covers, bricks, riser pipes; transportation and handling costs; tapping the main; placing and compacting backfill; furnishing additional backfill material, if required; constructing concrete support slabs; temporary paving; permanent

paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 23

For furnishing and delivering to the City mechanical joint plug valves for sewer force main, and valve boxes & lids, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of plug valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint plug valves; furnishing valve box & lid for plug valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 24

For installing mechanical joint plug valves for sewer force main, manhole, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 25

For adjusting rim elevation of existing sewer valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 26

For adjusting rim elevation of existing sewer ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 27, 29, and 31

For furnishing and delivering to the City HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE corrugated pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 28, 30, 32

For installing HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; HDPE corrugated pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the

Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Items No. 33

For furnishing and installing thec two (2) StormSafe Vaults model SSV40-2-000 by FABCO Industries, Inc., as specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSafe Vaults specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 34

For furnishing and installing the StormSack Plus model PSS1626-1E-000 by FABCO, specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSack Plus specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in

another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 35

For demolishing and removal of stormwater treatment structure as indicated in the plans, will be paid for from will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove the existing stormwater structure.

Items No. 36

For furnishing and delivering the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for furnishing all necessary structures specified on plans, transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 37

For installing the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary structures specified on plans, including making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 38

For repairing damaged structures for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 39

For adjusting rim elevation of existing stormwater structures to meet proposed grate and replace covers, in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 40

For furnishing and installing reinforced concrete headwalls at stormwater outfall per FDOT index No. 250, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the headwall at the pipe outfall.

Item No. 41

For furnishing and installing rubble (Broken Stone), including necessary geotextile filter fabric, at outfall embankment for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of tons of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 42

For furnishing and installing sand-cement bags for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of Cubic Yards of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 43

For furnishing and installing manatee grate for 36" pipe for stormwater outfall, will be paid for from the unit price amount established by the Contractor for this purpose, as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 44

For furnishing and installing 36-inch in-line check valves for sewer force main, including valve boxes, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 45

For excavating of existing backfill material at existing site location for grading for the roadway improvements along Cairo Lane and NW 127th Street, maintaining access to residences and businesses along the route of the excavation; protecting existing utilities along the route of the excavation, will be paid for at the unit price bid times the number of cubic yards removed to the satisfaction of the Engineer.

Item No. 46

For furnishing and installing additional suitable backfill material for grading for the roadway improvements along Cairo Lane and NW 127th Street, will be paid for at the unit price bid times the number of cubic yards of additional backfill furnished and installed as directed by the Engineer in the field and includes removal of loading, hauling, placing and compacting the backfill.

Item No. 47, 53, and 56

For cold milling roadway surface course for permanent pavement repairs of the nominal thickness specified in plans, will be paid for at the unit price bid times the number of square yards of such surface course milled and required as measured along the curb within the limits defined by details on the Plans and/or the City's Public Works Manual appended hereto and as approved by the Engineer. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for milling of surfaces indicated. Asphalt cold milling shall be performed using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final.

Item No. 48

For selling and delivering concrete for the installation of 8-inch Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for furnishing

concrete for the installation of Concrete Pavement, transportation and handling costs delivered ditchside. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 49

For constructing 8-inch-thick Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the Concrete Pavement. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 50

For constructing permanent pavement repairs for roadway (nominal 3.5-inch thick machine-laid asphaltic base course surface overlay type B-12.5) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 51

For constructing permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic pavement surface overlay type SP-12.5, PG-76-22) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 52

For constructing permanent pavement repairs for roadway (nominal 1-inch thick machine-laid asphaltic friction course surface overlay type FC-12.5, PG-76-21) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 54

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1-inch-thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include asphalt pavement driveways in roadways, as required and directed by the Engineer. After the pavement has been

milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 55

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include placement of 8-inch base material for pavement installation, as required and directed by the Engineer. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 57

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1.5-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 135th Street, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 58

For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, will be paid for at the unit price bid times the number of square feet of such sidewalk required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 59

For furnishing and constructing 6-inch concrete driveway approaches to match existing, will be paid for at the unit price bid times the number of square feet of such driveway required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 60

For constructing concrete curb and gutter restoration to match existing, will be paid for at the unit price bid times the number of linear feet of such curb and gutter required and placed as measured along the curb, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Item No. 61

For furnishing and constructing concrete valley gutter, will be paid for at the unit price bid times the number of linear feet of such valley gutter required and placed as measured along the street, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Items No.62

For installing General Guardrail per FDOT index No. 536 with mechanical appurtenances required as specified in these bid items will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing General Guardrail per FDOT index No. 536; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 63

For furnishing and installing pavement markings as indicated in Plans, will be paid for from the aggregate sum amount bid by the Contractor for this purpose. Such amounts represent the amount the contractor feels is necessary to comply with the governing agency's requirements. Reflective Pavement Markers and signings shall also be furnished and installed under this item and there will be no additional compensation paid for this work.

Items No. 64

For demolishing and removing of existing curb and gutter of the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear feet of curb and gutter established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove median curb and gutter.

Items No. 65

For removing and disposing existing trees located at the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear trees removed. Such amount represents the amount the Contractor feels is necessary to completely remove and disposal.

Item No. 66

For furnishing traffic control, will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to provide sufficient flagmen, signs, barricades, and similar items and work for directing traffic and maintaining safety during all times of work and other times as directed by the Engineer, the municipalities' Public Works Department and any other governing authority. Any portion of this fund remaining after all authorized payments have been made will remain with the Contractor. Conversely, no requests for additional payments will be approved.

Payment to the Contractor under this item will be by monthly percentage corresponding to the percentage of the Project's work items completed and paid for each month, as approved by the Engineer.

Items No. 67 – Dedicated Allowance

For repairing damaged Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 68 – Dedicated Allowance

For furnishing and replacing damaged Fire Hydrant Assemblies at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of damaged Fire Hydrant Assemblies replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, removal and disposal of damaged fire hydrant if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 69 – Dedicated Allowance

For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball

valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 70 - Dedicated Allowance

For repairing damaged water meters at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 71 - Dedicated Allowance

For furnishing and replacing water meters for service connections at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves and meters; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 72 - Dedicated Allowance

For repairing damaged catch basins for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Item No. 73 - Dedicated Allowance

For sheeting and shoring ordered left in place by the Engineer, will be paid for at the unit price bid per square foot, measured from tip to cut-off times the horizontal length, regardless of thickness, times the number of linear feet of sheeting and shoring left in place as accepted by the Engineer. Payment shall be full compensation for cutting off and for all salvage and potential reuse value of the material. Sheeting and shoring left in place without the Engineer's approval will be at the Contractor's expense.

Item No. 74 - Dedicated Allowance
For removal, transport, and legal disposal of above-ground debris, including tipping fees, will be paid for at the unit price bid times the number of cubic yards removed and legally disposed of, as measured by the truckload to the satisfaction of the Engineer.

Item No. 75 - Dedicated Allowance
For restoring sodded areas, will be paid at the unit price bid times the number of square yards of sod placed, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete restoration.

Item No. 76
Sum of Item Nos. 1 through 75.

Item No. 77 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of providing off-duty police officers as required for this project. Payment shall only reimburse the Contractor for the cost of the off-duty police officers for hours on duty at the work site; no overhead, travel time or other additional costs will be allowed. Any portion of this fund remaining after all authorized payments have been made will be withheld from contract payment and will remain with the City.

Item No. 78 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of all required construction permits and fees, if authorized by the Engineer. Payment shall reimburse the Contractor for only the cost of the construction permit and fee. Any question or whether a construction permit or fee is required shall be decided by the Engineer whose word shall be final. Any portion of this fund remaining after all authorized payments have been made will be withheld from Project payments and will remain with the City.

Item No. 79 - Contingency Allowance
For unforeseen conditions, minor construction changes and Quantity Adjustments, additional work not covered by other items, if ordered by the Engineer.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to unforeseen conditions, unforeseen conflicts between existing elements of work and the proposed work; for minor changes required to resolve any unforeseen conditions, Revised Regulations, Technological and Products Development, Operational Changes, Schedule Requirements, Program Interface, Emergencies and other Miscellaneous Costs; and for adjustments to estimated quantities shown on the unit prices of the Quotation to conform to actual quantities installed; and associated time related to this work only if ordered by the Engineer.

Payment to the Contractor under the Contingency Allowance will only be made for work ordered in writing by the Engineer, in accordance with Section 13 "Extra Work and Payment Therefore" of the "General Covenants and Conditions." Any portion of these accounts remaining after all authorized payments have been made will be withheld from Contract payments and will remain with the City.

A non-compensable time extension shall be included in the Contingency Allowance work when approved by the Engineer.

Item No. 80 - Contingency Allowance
Due to ongoing permitting efforts, additional changes to the bid set drawings might be necessary. This will be incorporated into the conformed set drawings, and any additional expenses or costs for the contractor due to these changes shall be reflected in this item.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to additional changes due to ongoing permitting efforts.

Item No. 81 - TOTAL BID
Sum of Item Nos. 76, 77, 78, 79, and 80.

1.0.7. NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.

2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.

3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.

4. Material not unloaded from transporting vehicle.

5. Defective work not accepted by Owner. Material remaining on hand after completion of work.

1.0.8. PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless shop drawings or preliminary operation and maintenance manuals are acceptable to the Engineer.

B. Final Payment: Will be made only for products incorporated in work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.0.9. ALLOWANCES

A. The allowances shall be used only at the discretion of and as ordered by the Owner for such items as unforeseen conditions, unforeseeable conflicts between existing elements of work and the proposed work, unit price items exceed estimated quantities, and any associated work requested by the Owner including all labor, materials, and services for modifications or extra work to complete the project that was anticipated, but not specifically included in this Contract.

B. Any portion of these allowances that remain after all authorized payments have been made will be withheld from contract payments and will remain with the Owner.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01031 GRADES, LINES AND LEVELS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work of this Section comprises the establishing of grades, lines and levels.

1.0.2. RELATED WORK

A. Section 01720 “Project Record Documents”

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Furnish all stakes, templates and other materials necessary for establishing and maintaining of the lines and grades necessary for control and construction of the work and all incidental labor necessary for the prosecution of the work.

PART 3 – EXECUTION

3.0.1. LAYOUT OF THE WORK

A. GENERAL

1. The Engineer of Record, through retaining the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida, shall furnish the Contractor with horizontal and vertical controls which shall be utilized as specified elsewhere herein to layout the work. The Professional Land Surveyor and Mapper, who is licensed in the State of Florida hired by the Contractor, shall verify all controls provided by the Engineer of Record and it shall be the responsibility of the Contractor to preserve same.

2. The Contractor shall retain the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida who, shall furnish and set stakes, establishing line and grade and shall solely be responsible for the layout of the work as well as the recording of all as-built dimensions and elevations. The Contractor shall furnish all additional stakes, templates, and other materials for marking and maintaining survey points and lines given, and shall be responsible for their preservation. Should any of the horizontal and vertical control points set by the Engineer of Record be destroyed or disturbed, they shall be reset by the Contractor's Florida Registered Land Surveyor and Mapper, at the Contractor's expense. All control points previously set by the Engineer of Record shall be verified by the Contractor's surveyor.

B. LAYOUT

As provided in Subsection 3.01-A, above, the Contractor through the services of his Florida Registered Land Surveyor and Mapper, shall establish the line and bench mark and other reference points for the pipeline or structure, as follows:

1. Structures: Will consist of baselines, stakes at building corners, centers and centerlines, auxiliary lines and two bench marks from which to establish the elevations. The Engineer of Record shall set a minimum of three horizontal and vertical control points which shall thereafter be maintained by the Contractor, without further help from the Engineer of Record, for use in establishing and checking the lines and grades as shown on the contract drawings.

2. Pipelines: Will consist of baselines, construction lines, centerlines, auxiliary lines and bench marks from which to establish the elevations. The Engineer of Record shall set horizontal and vertical control points at the beginning and end of the work and at a minimum distance of 1,400 ft. in between. When the total distance is less than 1,400 ft. control points shall be set at the beginning and end of the work.

3. The Contractor shall use this information to construct the structures and pipelines to the lines and grades shown on the project drawings and shall supply all equipment and personnel necessary to accomplish this end.

4. For pipelines, this will consist of establishing all points of bend (but not necessarily bevel pipe unless in close proximity to other facilities), valves, tees, crosses and other stations not more than 100 feet apart along the proposed centerline of the pipe, or along a stationed offset line as shown on the plans, marked by a nail in a metal cap if in pavement, with the station painted nearby or by a nail in the top of a wooden stake driven flush with the ground with the station marked on the flag stake nearby, if not in pavement.

5. The Contractor shall supply the City Inspector with a copy of the Florida Registered Land Surveyor and Mapper's layout of the work immediately upon its availability to his own forces.

6. The Contractor shall make his equipment and men available to the Inspector for spot checking the accuracy of the pipe laying. The Inspector shall require the Contractor to correct pipe alignment when necessary.

C. RECORD DRAWINGS:

1. During the entire construction operation, the Contractor shall retain the services of a State of Florida Registered Land Surveyor and Mapper who shall maintain

records of the installation, including all deviations from the plans and specifications by obtaining "as-built" dimensions and elevations.

2. The Surveyor shall prepare Record As-Built Drawings showing correctly and accurately all changes and deviations made during construction, including approved construction variances, to reflect the work as it was actually constructed.

3. Refer to Sections 01720 and 01725 for City's criteria for developing project record documents and record As-Built drawings.

D. HORIZONTAL AND VERTICAL CONTROL FOR DESIGN

The following shall apply when establishing horizontal and vertical controls for design. They shall also be used for the development of construction drawings.

1. Survey stationing shall proceed from south to north and/or from west to east.

2. Baseline or centerline shall be tied to section corners, or to monument lines or to right of-way lines.

3. Points along the survey line shall be referenced to perpetuate the alignment. Whenever possible, the reference points shall be established at right angles to the survey line and at intervals no longer than 1,400 feet. Reference points shall be shown on construction plans.

4. Centerline of side streets shall be established and set by nail and disc. Station and angle turned shall be given and shown on the plans.

5. All curve data (horizontal) shall be shown on plans. Point of curvature and point of tangency shall be set in the field, reference P.C. and P.T. or P.I.

6. Easement lines shall be tied to baseline or centerline. Give station and angle turned.

7. Set centerline or baseline stations every 100 feet on the ground using iron rods in unpaved areas or P.K. nails on asphalt.

8. All vertical control and elevations shall be referenced to North American Vertical Datum of 1988 (NAVD 1988).

9. Temporary bench marks (T.B.M.) and bench marks shall be established throughout the project at approximately 1,000 feet intervals. Show information on plans.

10. Centerline shall be tied to baseline if different from each other.

11. Tie proposed pipe to centerline or baseline, not to right-of-way line. Right-of-way line shall be tied to centerline or baseline.

12. All survey information shall be shown on the plans.

13. All point of intersections and deflection angles shall also be shown. Angle can be submitted by bearings.

END OF SECTION

01070 ABBREVIATIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Comply wherever in these specifications' references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

B. It is the intent of the Department to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. ABBREVIATIONS AND ACRONYMS

A. The Contractor is also alerted that various "Standards" are used herein for reference and criteria, and that he should obtain copies for his general use and protection. Abbreviated titles are used throughout these Specifications and although most of them are widely known, their complete titles are given below in order to avoid any misunderstanding.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
FAC	Florida Administrative Code
FBC	Florida Building Code
FDOH	Florida Department of Health in Miami-Dade County
FDOT	State of Florida Department of Transportation
MDDTPW	Miami-Dade Department of Transportation and Public Works
NSF	NSF International
OSHA	Occupational Safety and Health Administration

B. The above list shall not be considered complete, as there are other "Standards" used; however, in most cases complete titles have been given.

C. Wherever "Standards" are indicated herein for reference, the referenced portion shall have the same force and effect as if it were included, herein, in its entirety, latest revision if the date of publication is not shown.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01090 REFERENCE STANDARDS

PART 1 – GENERAL

1.0.1. REFERENCE STANDARDS

A. Comply with the requirements of standard with date as specified herein. Standards without dates shall be understood as the Standard current at the time of bid. In case of conflict between the referenced standards, the one having the more stringent requirements shall govern.

B. In case of conflict between the referenced standards and the Project Documents, the Project Documents shall govern.

C. When no reference is made to a code, standard, or specification, the standard specifications of the ASTM, the ANSI, the ASME, the IEEE, or the NEMA shall govern.

1.0.2. QUALITY ASSURANCE

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents or applicable codes establish stricter standards.

1.0.3 ABREVIATIONS

A. Abbreviated titles for other governing standards are used throughout these specifications and although most of them are widely known, their complete titles are given below to avoid misunderstanding.

1. AA: Aluminum Association.

2. AAMA: Architectural Aluminum Manufacturer's Association.

3. AASHTO: American Association of the State Highway and Transportation Officials.

4. ACI: American Concrete Institute.

5. ACPA: American Concrete Pipe Association

6. AI: Asphalt Institute

7. AIA: American Institute of Architects AISC American Institute of Steel Construction

8. AISI: American Iron and Steel Institute

9. AITC: American Institute of Timber Construction

10. ANSI: American National Standards Institute, Inc.

11. API: American Petroleum Institute

12. ASCE: American Society of Civil Engineers

13. ASME: American Society of Mechanical Engineers

14. ASMM: Architectural Sheet Metal Manual

15. ASSE: American Society of Sanitary Engineers

16. ASTM: American Society for Testing and Materials

17. AWS: American Welding Society

18. AWWA: American Water Works Association

19. BHMA: Builders Hardware Manufacturer's Association

20. CIPRA: Cast Iron Pipe Research Association

21. CLFMI: Chain Link Fence Manufacturers Institute

22. CMA: Concrete Masonry Association

23. DIPRA: Ductile Iron Pipe Research Association

24. ETL: Environmental Test Laboratories

25. FDEP: Florida Department of Environmental Protection

26. FDOT: Florida Department of Transportation

27. IEEE: Institute of Electrical and Electronics Engineers

28. NBS: National Bureau of Standards

29. NEC: National Electrical Code

30. NEMA: National Electrical Manufacturer's Association

31. NFPA: National Fire Protection Association

32. OSHA: Occupational Safety and Health Administration

33. SSPC: Steel Structures Painting Council

34. SSPWC: Standard Specifications for Public Works Construction

35. SFWMD: South Florida Water Management District

36. UL Underwriters Laboratories, Inc.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01100 SPECIAL PROJECT REQUIREMENTS

PART 1 – GENERAL

1.0.1. RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall have at all times as his agent on the site of the work a competent superintendent capable of reading and thoroughly understanding the plans and specifications.

B. The Contractor shall be responsible for the good condition of the work or materials until formal release from his obligations under the guidelines of this project. The Contractor shall store materials and shall be responsible for and shall maintain partly or wholly finished work during the continuance of the Contract. The Contractor shall place sufficient lights and danger signals on or near the work from sunset to sunrise; shall erect suitable railings or other protective devices about unfinished work, open trenches, embankments, or other obstructions; shall provide all necessary watchmen on the work by day or by night for the safety of the public and shall take all necessary precautions for preventing accidents or injuries to persons or property in or about the work.

C. The Contractor shall be responsible for the coordination, location, and relocation of utilities, including but not limited to utility light poles, cables, fiber optic lines, water mains and services, sewer mains and services, electrical, telephone and television cables, signals and signal poles, fences, guard rails, piping, conduits and drains that interfere with the positioning of the work as set out on the drawings. The cost of all such coordination and relocations shall be included in the bid for the project and shall not result in any additional cost to the City.

D. Prior to proceeding with trench excavation, the Contractor shall contact all utility companies and all other users of the right-of-way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three NORMAL WORKING DAYs before starting construction. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground utilities may be determined.

E. Wherever piping systems or utilities such as water, wastewater, air, chemical, electrical or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the drawings. Approximate locations of known installations in the vicinity of new work must be verified in the field by the Contractor, who shall uncover them carefully, prior to commencement of the work.

F. The Contractor shall be familiar with all codes and regulations of the Federal Government, the State of Florida, Miami Dade County, the City of Opa-Locka and any municipal corporations applicable to every aspect of the project. The Contractor shall provide all materials and shall perform all work necessary to fully comply with all provisions and requirements of applicable codes and regulations whether specifically indicated in the plans and specifications or not. It is the intent of the City to obtain a finished project in full compliance with all requirements of any agencies having jurisdiction over any portion of the work involved in the project. The Inspector will not recommend acceptance of the work until all requirements and provisions of pertinent codes and regulations have been satisfactorily fulfilled.

G. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

H. Any Conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.2. LAND FOR CONSTRUCTION PURPOSES

A. The Contractor shall limit operations, temporary facilities and storage of equipment and materials to on-site areas to be designed by the Engineer.

B. Should the Contractor require additional space he/she shall make his own arrangements for storage of materials and equipment in locations off the construction site. For the allocated space, submit to the Engineer for approval, proposed plan and layout for all temporary facilities, offices, storage facilities, temporary water service and distribution, and temporary power service and distribution. Prior to commencing any new construction remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, utility systems, plantings and all other existing installations. All of these existing features shall be restored to their initial or better than initial conditions.

1.0.3. PRE – CONSTRUCTION CONFERENCE

A. After the Award of Contract and prior to the issuance of the "Notice to Proceed," a preconstruction conference will be held with the Contractor, the Department, various utility companies and others who are interested in the Project for the purpose of coordinating the work. The time and place of meeting will be set by the Engineer.

B. In some cases the preconstruction conference may be held after the start work date stated in the written "Notice to Proceed." This may be due to difficulty with coordination of all parties concerned, or other similar reasons.

C. Such delays in holding the preconstruction meeting will not relieve the Contractor of any responsibilities hereunder, and will not be an acceptable reason for him to request additional work completion time beyond that provided since he can be obtaining permits, mobilizing his equipment and forces, ordering materials, performing minor work, or other work if approved by the Engineer, during the interim period.

D. Prior to the preconstruction conference, the Contractor shall prepare the construction schedule as described in Section 01120 - Sequence of Construction and General Information and Section 01200 - Project Meetings, "Project Scheduling" and provide copies of the same to others in attendance.

E. The construction schedule shall include the place of beginning, the proposed order of progression, together with the estimated times for beginning and completing the various items of work. In addition, the Contractor shall prepare on electronic media, a critical path method (CPM) with emphasis made to "construction time and completion."

F. The Engineer will discuss requirements of such matters as project supervision and inspections, progress schedules and reports, Contract Change Orders, insurance, safety, and other items pertinent to the Project.

G. All parties to this conference should be prepared to discuss any problems anticipated with the execution of the work under this Contract.

1.0.4 SAFETY REQUIREMENTS

A. The Contractor shall comply with the Department of Labor Safety & Health Regulations for construction promulgated under the Occupational Safety & Health Act of 1970, (PL 91-596).

B. Comply with all applicable provisions of the Occupational Safety and Health Act (OSHA). The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for review before Notice to proceed will be issued.

C. Conduct operations in such a manner, utilizing warning devices, such as traffic cones, barricades and warning lights, that traffic and pedestrians are given adequate warning of hazard of the work site as may be deemed necessary by the City and/or the Engineer.

D. Certain products specified in these specifications contain warnings by the manufacturer that under certain conditions, if instructions for use of the product are no followed, a hazardous condition may develop. It is the Contractor's responsibility to instruct its workmen in the safe use of the product, or any product substitution.

E. For trench excavations in excess of five feet in depth, the Contractor shall comply with the provisions of the State of Florida "Trench Safety Act".

F. The contactor shall be familiar with the “Underground Facility Damage Prevention and safety Act”, Florida Statute 556. The Contractor shall contact the Sunshine State One Call Center of Florida.

G. Do not store any environmentally hazardous materials such as solvent, greases, lubricants or any other type of chemical substances at the work sit. The Contractor is permitted to keep such materials at the site as are for immediate use only. Do not store any empty container at the site.

1.0.5 PIPE AND EXISTING UTILITIES

A. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

B. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving and similar items for which a pay item was established in the quotation, then such additional work and items will be paid for at the prices bid. Wider trench widths may be paid with the approval of the Engineer.

C. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

1.0.6 MATERIALS AND EQUIPMENT FURNISHED BY THE CITY

A. No material or equipment will be furnished by the City under this Contract. All material, labor and equipment necessary for completion of the work shall be furnished and installed by the Contractor, whether or not shown on the Plans or specifically mentioned in the Specifications.

1.0.7 WATER USED IN CONSTRUCTION

A. The City will furnish water at a charge for all construction activities unless otherwise specifically made an exception in the project specifications or specifically made an exception by the Engineer in writing.

B. Consumption for the following activities shall be determined by City personnel who shall be provided with a minimum of seventy-two (72) hour advance notification. Failure of the Contractor to provide advance notification and/or have City personnel on site to witness and verify consumption for the following activities could result in his being fined and/or a citation being issued against him in accordance with the Rules and Regulations of the City's Tampering Section.

1. Pigging:

2. Flushing, only if and when approved by the Engineer:

3. Chlorination, if applicable:

4. To fill mains being pressure tested, excluding make-up water during test: and

5. When and where directed or approved by the Engineer.

Water for construction activities listed above will be furnished from adjacent City-owned water mains or the most convenient water source. In instances where no City-owned source of water is available, the Contractor shall make his own arrangements with the municipality or other controlling authority and include the cost of all water required during construction in his overall construction cost. No reimbursement will be made.

C. Water used in construction for purposes other than those listed above, including make-up water pumped into the pipe during hydrostatic testing, will be furnished by the City at a charge. This water will be supplied from the most convenient source through the existing piping. However, all water used must be metered through a City meter. The Contractor will be billed by the City based on water usage recorded by the floating meter.

D. When the project is occurring in the City of Opa-Locka, the Contractor shall present to the City, the Fire Department Permit during application with the New Business Office.

E. All piping, fittings, valves and equipment, including pumps and power, required for handling the water shall be furnished by the Contractor. Care shall be exercised in the use of the water and provision shall be made to protect the water supply for contamination and indiscriminate use by unauthorized persons. The Contractor shall use only potable water unless otherwise specifically called out elsewhere herein and then only in the case of sewage force mains, reclaimed water mains or raw water mains.

F. Under no circumstance shall the Contractor utilize a water source, including existing piping, until such source or piping has been approved for use by the City.

1.0.8 MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR

The general requirements specified herein shall apply to all items of materials and equipment in addition to the Specifications for individual items appearing in the following sections:

A. All materials and equipment furnished by the Contractor for use in the work shall be new and of recent domestic manufacture, and shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for at least five (5) years. All components shall, wherever possible, be standard stock articles of well-known domestic manufacturers. Where the plans and specifications designate the product of a particular manufacturer, the product specified has been found suitable for the intended use, but, unless otherwise provided, articles or products of similar characteristics may be offered for the approval of the Engineer. A minimum of six copies (more if so required herein) of complete descriptive data shall be furnished regarding all articles furnished by the Contractor. The descriptive data shall consist of dimension drawings, catalog references and other information necessary to clearly identify each article. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense and shall be solely responsible for all cost and time required by any difference in construction methods, fabrication or assembly required and no additional time will be allowed. Any re-permitting together with all costs and work associated therewith shall be performed by the Contractor and no additional compensation will be allowed.

B. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. All water system components shall be in full compliance with NSF/ANSI 61, "Drinking Water System Components - Health Effects," latest revision.

D. The Contractor shall also supply certification that all materials supplied that will come into contact with drinking water conform or will conform with NSF/ANSI 61.

E. The Contractor shall care for and protect against loss or damage all material and equipment to be incorporated in the construction, whether furnished by him/her or by the City, for the duration of the Contract, and shall repair or replace any lost or damaged items. The Contractor shall be relieved of such responsibility only upon final acceptance of all of the work by the Engineer.

F. No material shall be stored so that it is in direct contact with the ground. All metal shall be thoroughly cleaned before being placed in the work. Storage and protection measures shall be subject to approval of the Engineer whose decision shall be final.

The Contractor shall immediately protect materials by different methods, materials or to a greater extent if so, directed by the Engineer in the field.

G. Unless otherwise specified or noted on the plans, all steel bolts, nuts, washers, eye bolts, tie rods and all other miscellaneous ferrous metal items shall be American made stainless steel.

H. The Contractor shall have available sufficient tools and equipment to properly perform his work in all areas of the system, including easements or other areas with limited or restricted access or clearances. The Contractor is specifically advised that work in easement may require specialized equipment to satisfactorily perform the work and the capability to accomplish these installations is a requirement of these specifications.

I. Any salvageable pipe, fitting, or other miscellaneous material or equipment, removed during construction and not reused in the work shall be cleaned, hauled to and stored by the Contractor at his expense, where directed by the Engineer, and shall remain the property of the City. All other material and equipment shall be disposed of by the Contractor at his own expense.

J. To ensure satisfactory and successful final painting of materials and equipment to be furnished, it is essential that the paints applied in the shop and in the field be mutually compatible. To this end, the Contractor shall require that the shop paints be applied to materials and equipment be compatible with the paints he proposes to use in the field or shall determine what shop paints have been used and select field paints compatible therewith, all as approved by the Engineer.

K. The Contractor shall furnish the City, with one set of any special tools required for servicing for each type of equipment actually furnished. These tools shall be delivered to the office of the City's Construction Manager, City of Opa-Locka Public Works. A letter of transmittal shall be provided, containing a list of all items being provided.

L. All other material required to complete this project shall be furnished and installed by the Contractor, whether or not shown on the plans or specifically mentioned in the specifications.

M. The Contractor shall procure extended manufacturer's warranties on equipment furnished by him. These warranties shall be kept in force and extended such that the City will be provided a manufacturer's warranty with at least one year to run beyond the date of final acceptance of the project. A copy of the warranty with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warranty/certification is delivered to the Engineer.

1. The warranty shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warranty shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

2. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warranties or certifications of warranty extensions showing the warranties to be in effect at least one year beyond the planned date of final acceptance.

3. All costs for procuring, maintaining and extending these warranties shall remain with the Contractor, even in cases where the contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

4. In instances, where the City puts an item of equipment into full productive service prior to final acceptance, the warranty shall still be extended to at least one year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warranty from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warranty cost will be reimbursed, no overhead or other costs will be allowed.

N. Extended Warranties:

1. The Contractor shall procure extended manufacturer's warrantees on equipment furnished by him. These warrantees shall be kept in force and extended such that the City will be provided a manufacturer's warrantee with at least one (1) year to run beyond the date of final acceptance of the Project. A copy of the warrantee with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warrantee/certification is delivered to the Engineer.

2. The warrantee shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warrantee shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent

and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

3. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warrantees or certifications of warrantee extensions showing the warrantees to be in effect at least one (1) year beyond the planned date of final acceptance.

4. All costs for procuring, maintaining and extending these warrantees shall remain with the Contractor, even in cases where the Contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

5. In instances where the City puts an item of equipment into full productive service prior to final acceptance, the warrantee shall still be extended to at least one (1) year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warrantee from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warrantee cost will be reimbursed, no overhead or other costs will be allowed.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01120 SEQUENCE OF CONSTRUCTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. The sequence of construction has been divided into phases and steps representing major work areas, all of this in order to facilitate to the Contractor the execution of the project and minimize conflicts with operations. The general sequence of construction shall be as described in this Section, but also the City reserves the right to make changes on it.

B. Coordinate sequence of construction with progress schedule to ensure timely performance of the work and project completion within the specified construction time.

C. Special Instructions: It is the intent of the City to construct this project with as little disturbance and annoyance to the pump station's neighbors as possible.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City.

E. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

F. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

1.0.2 GENERAL

A. Following receipt of "Notice to Proceed" with the work, the Contractor shall notify the Engineer at least five (5) days before he is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipe location in accordance with Section

02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”, Construction Methods.

C. The Contractor's equipment must be in first class operating condition, including safety features, proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment.

D. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

E. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

F. All items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a completed Project.

G. Water in the trench shall be kept below the level of the pipe to prevent the entry of debris and contaminants into the pipe.

    1. In instances where Section 02220 – Excavation, General, "Alternate Method of Construction" is approved by the Engineer and used for the Project: During construction, the Contractor shall install a temporary plug, or other means approved by the Engineer, on the open end of the pipe in order to prevent debris and trench water backwash from entering the pipe during trench excavation ahead of the installed pipe. The plug shall remain in place until the following length of pipe is ready to be installed. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

H. No separate payment shall be made for the cost of labor and materials required for the removal of nightcaps, plugs, bulkheads or external blocking and bracing of adjacent mains, for the supplying of water for cleaning and testing, nor for the interconnecting work to adjacent mains unless listed separately in the Quotation, and the cost of this work shall be included in other applicable items of work.

I. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer in writing, no extension of Project time will be allowed due to such a shutdown. If any extension of time is allowed, it will be of a non-

compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

J. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours effects the work of the Contractor, the Contractor's sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

K. New or altered potable water mains, including services, that will be under City control and have an inside diameter of three inches or larger shall be disinfected and bacteriologically evaluated in accordance with FAC Rule 62-555.340. Note that the above requirements are minimum, and the City may require more stringent procedures and routinely requires all services of whatever size be tested and disinfected along with the main. These more stringent or extensive requirements shall be performed by the Contractor and no extra compensation will be allowed.

L. All pipe and fittings installed under this project shall be color coded or marked as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water and green as the predominant color for sanitary sewage facilities. Underground metal or concrete pipe shall have colored stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Striping shall be continuous and run the full length of the pipe. Aboveground pipe shall be painted shall be color coded or marked like underground pipe.

M. The Contractor shall take steps to provide accessibility for local traffic. The construction in this area shall proceed as quickly as possible and paving shall follow immediately to reduce inconvenience to residents in this area of the project.

N. The Contractor shall take pictures of the work site, in accordance with Section 01380 "Construction Photographs," prior to the start of any construction.

O. The Contractor is advised that, during the construction of the Project, the Construction Manager may require the Contractor to adjust the location of the proposed valves. This relocation(s) shall be performed at no additional cost to the City.

P. Locations of solid sleeves are for general information only. Exact location of solid sleeves shall be determined in the field by the Engineer. Prior to installation of solid sleeves, the pipe and fittings shall be hosed and kept clean, then swabbed with disinfectant as necessary for water main installation. Water in trench shall be kept below the pipe invert.

1.0.3 EXISTING WATER MAINS AND FORCE MAINS

A. The existing mains in the project area shall remain in service until the new mains are placed in service. Connections and disconnections together with cut, plug and abandonment work shall be coordinated through the City's Construction Manager. In all instances, the City's Construction Manager shall, beginning with the Preconstruction Meeting, coordinate with the Operations Division to pre-determine the notification lead times required for various operations.

1.0.4 SEQUENCE OF WORK

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. CAPITALIZED ITEMS INDICATE WORK OR FUNCTIONS TO BE PERFORMED BY CITY FORCES. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to <u>any</u> excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

11. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

12. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

13. The general sequence of work shall be as follows:

1) <u>Phase I – Mobilization</u>

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:

Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 15 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 16 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 12+85.40±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 14+09.55±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 16+29.36±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane

At STA. 17+17.51±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 17+37.10±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 18+16.42±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 18 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 19 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 21 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 22 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 26 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 27 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 28 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 29 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 30 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 30 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 31 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 33 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 34 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 35 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 37 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 38 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 39 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 41 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 42 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 43 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 44 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01200 PROJECT MEETINGS

PART 1 – GENERAL

1.0.1. PROJECT SCHEDULES

A. General: Develop and submit for approval by the City a construction progress schedule and phasing plan demonstrating complete fulfillment of all Contract requirements including all activities of Subcontractors, equipment vendors and suppliers. Unless otherwise directed by the Engineer, the construction progress schedule shall be computer developed and maintained using Microsoft Project software as manufactured by Microsoft Corporation, Primavera, or equal. The Contractor shall prepare a network plan utilizing CPM (Critical Path Method). The City reserves the right to request progress schedule on magnetic media.

B. Submittal: The progress schedule shall be plotted on 11-inch by 17-inch paper and shall be reviewed and updated monthly, depicting progress through the last day of the current month and scheduled progress through completion. Six up to date copies of the schedule shall be submitted along with the application for monthly progress payments for the same period.

1. Immediately after award of contract, submit for review the progress schedule describing the activities to be accomplished and their dependency relationships, showing starting and completion dates for each activity in terms of the number of days after receipt of Notice to Proceed. All completion dates shown shall be within the period specified for contract completion.

2. After receipt and initial review, the Engineer will meet with the Contractor for joint review, correction or adjustment of the proposed plan and schedule. Within five (5) calendar days after the joint review, the Contractor shall revise the schedule in accordance with agreements reached during the joint review and shall submit two copies of the revised schedule. After the Contractor has received both the Notice to Proceed and the approved copy of the schedule, he shall immediately add calendar dates in lieu of the number of days from the date of Notice to Proceed and shall furnish two copies of the revised schedule to the Engineer.

C. Schedule Requirements:

1. Show the sequence and interdependence of activities required for complete performance. In preparing the schedule, break up the work into activities of a duration of no longer than fifteen working days each, except as to non-construction activities (such as procurement of materials, delivery of equipment and concrete curing) and any other activities for which the Engineer may approve the showing of longer duration. The schedule shall show the activities for actual construction

work for each trade category of the project. The Contractor is to include a schedule of submittals of shop drawings, equipment schedules, coordination drawings, templates, fabrication, delivery and the like, and review and approval of shop drawings. Activities related to a specific physical area of the project shall be grouped on the schedule for ease of understanding and simplification. Activity duration (i.e. the single best estimate, considering the scope of the activity, and the resources planned for the activity) shall be shown on each activity on the diagram. To the extent that the schedule or any revised schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the City's approval of the schedule.

2. Include a cost estimate for each activity which cumulatively equals the total Contract cost. Estimated overhead and profit shall be prorated throughout all activities. The partial payments as defined under the General Conditions will be based on these approved activity costs.

3. With each request for a partial payment, submit a copy of the approved schedule marked to show the activities completed and partially completed, for which payment is requested.

4. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer In writing, no extension of Project will be allowed due to such a shutdown. If any extension of time is allowed, it will be a non-compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

5. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours affects the work of the Contractor, the Contractor’s sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

1.0.2. PROGRESS MEETINGS

A. General progress meetings will be held once each week at which every entity then involved in the planning, coordination and performance of work shall be discussed. The progress of each element of current work shall be discussed as to whether it is ahead of schedule, on time or behind time in relation to the updated progress schedule. For each meeting, the Contractor shall prepare a detailed three (3) week "look ahead" schedule in addition to, showing the progress schedule of the previous week. Methods to expedite behind-time work shall be determined, and commitments secured for bringing back to the scheduled date for the entities involved. Everything of significance which could affect the progress of the work, including schedule revisions, shall be discussed to ensure that current and subsequent work will be completed within the Contract time. Within three days after each meeting, copies of the minutes of the meeting, including a brief summary of progress of the work since the previous meeting, shall be distributed to each present or who should have been present. Whenever revisions to the progress schedule have been made or recognized at the progress meeting, a copy of the revised schedule shall accompany the minutes distributed.

B. Each computer-generated construction progress schedule and report shall include the following minimum items:

1. Activity Numbers.
2. Duration Estimate.
3. Activity Description.
4. Early Start Date (Calendar Dated).
5. Early Finish Date (Calendar Dated).
6. Latest Allowable Start Date (Calendar Dated).
7. Latest Allowable Finish Date (Calendar Dated).
8. Status (whether critical).
9. Estimated Cost of The Activity.
10. Total Float and Free Float.

C. In addition, each construction progress schedule, network analysis and report shall be prefaced with the following summary data:

1. Contract Name and Number.

2. Contractor's Name.

3. Contract Duration.

4. Contract Schedule.

5. The Effective or Starting Date of The Schedule (the date indicated in the Notice-to-Proceed).

D. The workday to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays, adverse weather and all other special requirements of the work. Normal work hours are Monday thru Friday, 7:30 am to 4:30 pm.

E. If the Contractor desires to make changes in the method of operating which affects the construction progress schedule and related items, he/she shall notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer accepts these changes, in writing, the Contractor shall revise and submit, without additional cost to the City, all of the affected portions of the construction progress schedule, and associated reports. The construction progress schedule and related items shall be adjusted by the Contractor only after prior acceptance, in writing by the Engineer. Adjustments may consist of changing portions of the activity sequence, activity durations, division of activities, or other adjustments as may be required. The addition of extraneous, non-work activities and activities which add restraints to the construction progress schedule shall not be accepted.

F. Except where earlier completions are specified, schedule dates which show completion of all work prior to the contract completion date shall, in no event, be the basis for claim for delay against the City by the Contractor.

G. Construction progress schedules and related items which contain activities showing negative float or which extend beyond the contract completion date will not be accepted by the Engineer. Whenever it becomes apparent from the current construction progress schedule and associated reports that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the Engineer, the Contractor shall take some or all of the following actions at no additional cost to the City. They shall submit to the Engineer for approval, a written statement of the steps they intend to take to remove or arrest the delay to the critical path in the current construction progress schedule.

1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.

2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.

3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.

H. If when so requested by the Engineer, the Contractor should fail to submit a written statement of the steps they intend to take or should fail to take such steps as reviewed and accepted in writing by the Engineer, the Engineer may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the current construction progress schedule, and the Contractor shall promptly provide such level of effort at no additional cost to the City.

I. If the completion of any activity, whether or not critical, falls more than 100 percent behind its previously scheduled and accepted duration, the Contractor shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.

J. Shop drawings which are not approved on the first submittal or within the time scheduled, and equipment which does not pass the specified tests and certifications shall be immediately rescheduled.

K. The contract time will be adjusted only in accordance with the General Requirement and other portions of the Contract Documents as may be applicable. If the Engineer finds that the Contractor is entitled to any extension of the contract completion date, the Engineer's determination as to the total number of days extension shall be based upon the current construction progress schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule and related items. Actual delays in activities which, according to the construction progress schedule, do not affect any contract completion date will not be the basis for a change therein.

L. From time to time it may be necessary for the contract schedule of completion time to be adjusted by the City in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. Under such conditions, the Engineer will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions, and the Contractor shall revise the construction progress schedule and related items accordingly, at no additional cost to the City.

M. Available float time may be used by the City through the City's Engineer.

N. The City controls the float time and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates the City may initiate changes that absorb float time only. City initiated changes that affect the critical path on the network diagram shall be the sole grounds for extending the completion dates. Contractor-initiated changes that encroach on the float time may be accomplished only with the City's concurrence. Such changes, however, shall give way to City-initiated changes competing for the same float time.

O. To the extent that the construction project schedule, or associated report or any revision thereof shows anything not jointly agreed upon or fails to shown anything jointly agreed upon, it shall not be deemed to have been accepted by the Engineer. Failure to include on a schedule any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the review of the schedule by the Engineer

P. Review and acceptance of the construction progress schedule, and related reports, by the Engineer is advisory only and shall not relieve the Contractor of the responsibility for accomplishing the work within the contract completion date. Omissions and errors in the construction progress schedule, and related reports shall not excuse performance less than that required by the Contract and in no way make the Engineer an insurer of the Contractor's success or liable for time or cost overruns flowing from any shortcomings in the construction progress schedule, and related reports.

Q. The Contractor shall present and discuss the proposed schedule at the preconstruction conference.

R. The construction progress schedule shall be based upon the precedence diagramming method of scheduling and shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the work and identifying all construction activities included but not limited to yard piping, all structures and treatment units and all related work specified herein to be performed under the Contract. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the work in order to complete the project within the contract time. The project critical path shall be clearly identified.

1.0.3. DAILY REPORTS

A. Prepare and submit to the Engineer at regular intervals not exceeding weekly intervals, a daily report recording information concerning events at the site. The daily reports shall contain the following and any other significant information:

1. General weather conditions, rain, high/low temperatures.

2. List of Subcontractors on site.

3. List of separate Contractors at the site, if any.
4. Meetings and significant decisions.
5. Stoppages, delays, shortages, losses.
6. Emergency procedures, field orders.
7. Orders/requests by governing authorities.
8. Other events or activities.
9. Partial completions.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01300 SUBMITTALS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, materials, reinforcing steel, fabricated items, and piping and conduit details. The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

B. The Contractor shall submit copies of all permit applications, permit submittals, permit comments and permit approvals.

C. Within 10 calendar days after Notice to Proceed, Contractor shall submit a complete list of all anticipated submittals including shop drawings, submittals, and product data with an anticipated delivery date to the Engineer and review and approval times. This shall be reviewed during the Project Kickoff Meeting and shall be continuously updated and reviewed during Project Progress Meetings.

1.0.2. CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where his submittal may affect the work of another Contractor or the Owner. The Contractor shall coordinate submittals among its Subcontractors and suppliers including those submittals complying with unit responsibility requirements.

B. Record Drawings: Refer to Section 01720 "Project Record Drawings".

C. As-Built Record Drawings: Refer to Section 01725 "As-Built Record Drawings".

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01340 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Before proceeding with the erection of the construction plan, including the setting or placing thereof, and the erection of other temporary structures, the Contractor shall furnish the Engineer with such information and plans as the City may require.

B. Shop Drawings (including Pre-Approved Product List submittals) shall be submitted prior to any project construction activity. In a timely fashion, well before the contemplated ordering for fabrication of special order or long-lead items or construction use of any standard element of the work, the Contractor shall furnish Shop Drawings for the review and approval of the City.

C. It is the Contractor's sole responsibility, upon the first occasion of submittal of a particular element of the work, to submit Shop Drawings of an element which match and fulfill the requirements and intent of the plans and specifications. Any delays or costs caused, either directly or indirectly, by non-timely submissions; submission of items differing significantly from the intent of the plans and/or specifications; repeated submission of, or argument over, rejected elements or changes required for acceptance; arguments with the criteria or requirements of the plans or specifications; or any other such similar activities shall be at the expense of the Contractor.

D. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

1.0.2. DESCRIPTION OF WORK

A. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

B. After award of the project, the Contractor may begin providing submittals for approval. Submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop

Drawings and providing materials, equipment, etc., fully in accordance with the specifications. This procedure is required in order to expedite final review of Shop Drawings.

C. Maintain an accurate updated Shop Drawing submittal log which shall include the following items:

1. Submittal Description and Number Assigned.

2. Specification Section.

3. Plans Sheet Number.

4. Date to Engineer.

5. Date Returned to Contractor (from Engineer).

6. Status of Submittal (Approved, Approved as Noted, Rejected/Resubmit).

7. Date of Resubmittal and Return (as Applicable).

8. Date Material Release (for Fabrication).

9. Projected Date of Fabrication.

10. Projected Date of Delivery to site.

11. Status of O & M Manuals Submittal.

1.0.3. CONTRACTOR'S RESPONSIBILITY

A. Furnish the Engineer with a schedule of Shop Drawings submittals, fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

B. Submit to the Engineer all plans and schedules sufficiently in advance of construction requirements to provide maximum time for checking and appropriate action from the time the Engineer receive them.

C. It is the duty of the Contractor to check and approve all plans, data and samples prepared by or for him/her before submitting them to the Engineer for review. Each and every copy of the plans and data shall bear Contractor's stamp showing that they have been checked and approved. Shop Drawings submitted to the Engineer without the Contractor's stamp and approval shall be returned to the Contractor for

conformance with this requirement before Engineer's review. ***Shop Drawings shall indicate any deviations in the submittal from requirements of the Project Documents and the Contractor shall state the reason why a deviation is required.***

D. All submittals shall be accompanied by a submittal registry and transmittal letter containing the following information:

1. Date.

2. Project Title and Number.

3. Contractor's name and address.

4. The number of each Shop Drawing, Data, and Sample submitted.

5. Notification of Deviations from Project Documents.

6. Submittal Log Number conforming to and referring to Specification Section Number.

7. Contractor signature or of its authorized representative.

E. Submit seven copies of Shop Drawings and of descriptive or product data submittals necessary to complement Shop Drawing. The Engineer will retain five sets.

F. After receiving approval by the Engineer, the Contractor shall be responsible for submitting the Shop Drawings to the City. Shop Drawings of all premanufactured items and all other Shop Drawings are required to obtain approval prior to manufacturing or installing the submitted items. The Contractor shall also be responsible for contesting any interpretations by the City that considers non-acceptable. The Contractor shall include in the bid prices, all costs for permits, fees and expenses associated with the submittals, including resubmittals (if any) of Shop Drawings to the City.

G. Do not begin any of the work covered by a drawing, data, or a sample returned as “Rejected/Resubmit” until a revision or correction thereof has been reviewed and returned to the Contractor, by the Engineer, with approval or approval “As Noted”. Be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to receiving Engineer's approval or approval “As Noted” of the necessary Shop Drawings.

H. Be fully responsible for observing the need for and for making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment the Contractor proposes to supply, both as they

pertain to the Contractor's own work, work of others, or of other Divisions herein or Trades and clearly show such changes on the Shop Drawings.

I. When substitutions in materials or equipment are allowed, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense.

J. When substitutions in materials or equipment are allowed, the Contractor shall be solely responsible for all costs and time required by any differences in construction methods, fabrication or assembly required and no additional time will be allowed.

K. Determine and verify:

1. Field measurements.

2. Field construction criteria.

3. Catalog numbers and similar data.

4. Conformance with specifications.

5. That installation and maintenance clearances are sufficient particularly when equipment or arrangement changes have been made.

1.0.4. ENGINEER'S REVIEW OF SHOP DRAWINGS

A. Engineer's review of plans, data and samples, submitted by the Contractor will cover only general conformity to the drawing and specifications. The Engineer's review will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown. The review of plans and schedules will be general, and shall not be construed:

1. As permitting any departure from the Contract requirements.

2. As relieving the Contractor of responsibility for any errors, including detail, dimensions, and materials.

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

B. Variations:

1. If the plans or schedules, as submitted, describe variations per paragraph 1.03 C, and show a departure from the Contract requirements which Engineer finds to be in the interest of the City and to be so minor as not to involve a change in Contract price or time for performance, the Engineer may return the reviewed plans without noting an exception.

2. If the plans or schedules, as submitted, describe variations and show a departure from the Contract requirements which the Engineer finds to be minor enough to be corrected by redlining the submittal, the Engineer will mark and return the submittal marked "Approved as Noted." The redlined corrections shall be as binding on the Contractor as would be a resubmission embodying the same corrections.

C. When reviewed by the Engineer, each of the Shop Drawings shall be stamped and dated to indicate it had been reviewed. Shop Drawings stamped "Revise and Resubmit" and with required corrections shown will be returned to the Contractor for correction and resubmittal.

D. If the Contractor considers any correction indicated on the Shop Drawings to constitute a change to the project plans or specifications, the Contractor shall give written notice thereof to the Engineer who will render a decision which shall be final. After the decision has been made, the Contractor shall without delay, provide the corrections to the plans.

E. When the Shop Drawings have been approved by the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

F. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for resubmittal.

1.0.5. SHOP DRAWINGS

A. Shop drawings shall be of such character that they may be used as fabrication drawings. Prior to submission, the Contractor shall thoroughly check such drawings, satisfying himself that they meet the requirements of the Plans and Specifications and that they are coordinated with the arrangements set forth on other shop drawings, and shall place on them the Project Number, the date and his signature and stamp of approval. Where items for which shop drawings are submitted are to meet special conditions listed in the detailed Specifications, the conditions shall be so noted on the drawing. Where there is a deviation from the Specifications, the Contractor shall note it and state the reason why a deviation is required. Two copies will be returned to the Contractor with the Engineer's mark of approval thereon, or will be marked to indicate changes necessary to effect compliance with the Specifications and the remaining copies will be retained by the City. When shop drawings are approved by the Engineer, they shall be as binding as any of the Contract Documents. Any errors or omissions on the shop drawings shall not relieve the Contractor of his responsibility.

He shall correct such errors, or omissions, including any necessary additions or alterations to construction, at his expense upon notification by the Engineer.

B. Shop drawings submitted without the required approval as specified above shall be returned without review and no extension of time will be granted for any delays caused by such improper submission.

C. The approval of shop drawings and data will be general, and shall mean that upon examination of the shop drawings, no variations from the Contract requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined under the Contract.

D. When used in the Project Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the project. These Shop Drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance/test data shall be considered only as supportive to required Shop Drawings as defined above.

E. Manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Information which is not applicable to the work shall be deleted by striking or cross hatching.

F. If plans show variations from Contract requirements because of standard shop practice or for other reasons, describe such variations in the letter of transmittal. If no explanation of these variations is provided, the Contractor shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such plans have been reviewed and approved.

G. For all mechanical and electrical equipment furnished, provide a list including the equipment name, address of and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

H. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required Shop Drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five years, unless otherwise specified. Manufacturers and/or equipment which fails to meet the specified experience period will be considered if the manufacturer or supplier provides a bond or cash deposit which will guarantee replacement of the equipment or process in the event of failure or unsatisfactory service.

I. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.

1.0.6. REQUIRED INFORMATION

A. Submit, as applicable, the following for all prefabricated or manufactured structural, mechanical, electrical, plumbing, process system, and equipment work:

1. Shop Drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.

2. Catalog information and cuts.

3. Installation or placing plans for equipment, drives, and bases.

4. Supporting calculations, signed and sealed by a Florida Registered Engineer when required, for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers.

5. Signed and sealed calculations and plans by in-house Florida Registered Professional Engineer for structural systems, indicating compliance to the structural design criteria specified in the plans.

6. Complete manufacturer's specifications, including materials description and paint system.

7. Performance data and pump curves.

8. Suggested spare parts with current price information.

9. List of special tools required for testing, checking, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and are not customarily and routinely carried by maintenance mechanics)

10. List of special tools furnished with the equipment

11. List of materials and supplies required for the equipment prior to, and during startup

12. List of materials or supplies furnished with the equipment

13. Special handling instructions

14. Requirements for storage and protection prior to installation

15. Requirements for routine maintenance required prior to equipment startup

16. List of all requested exceptions to the Project Documents

1.0.7. SUBMITTAL REQUIRED FOR FOREIGN MANUFACTURED ITEMS

A. In addition to the submittal requirements stated above, suppliers of foreign manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the work. Failure to prove these capabilities shall be cause for rejection of the foreign manufactured items.

B. Foreign manufactured equipment and materials shall in all cases be clearly and permanently marked with the manufacturer's name and country of origin of the item. The name of the U.S. importing/supplying firm is not acceptable. Shop Drawing submittals of foreign-made items shall be accompanied by written information to include name and location (i.e. country, City, and street address) of the manufacturer. This requirement shall also apply to the foreign made elements of items assembled in this country from parts wholly or partially manufactured overseas.

1. The words, "Permanently Marked" as used in this paragraph shall mean; die stamped, cast-in, welded, or otherwise marked such that the removal of the marking by any mechanical or chemical means will result in obvious permanent damage to the surface marked. These markings shall be on surfaces which are not hidden by assembly.

C. Where specified elsewhere herein or at the sole discretion of the Engineer, whose word shall be final, supply verification of quality, suitability or other aspects, as directed by the Engineer, from a Professional Engineer licensed to practice in the State of Florida or the state where the supplying U.S. firm is located. The verification shall be signed, sealed, and dated. All costs for this verification shall be at the sole expense of the Contractor and no extra compensation will be allowed. Verification by foreign-based engineers, firms, manufacturers, etc. will not be acceptable.

1.0.8. SAMPLES

A. Furnish for the approval of the Engineer, samples required by the Project Documents or required by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture and pattern.

3. A minimum of two samples of each Item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of Project.

2. Material or Equipment Represented.

3. Name of Producer and Brand (if any) Location in Project.

D. Prepare a transmittal letter in triplicate for each shipment of samples containing the information specified herein in Paragraph 1.05 A. Enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use specified and shall not be construed to change or modify any Contract requirements.

E. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples.

1.0.9. SUSTITUTION

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents, which are proposed by the Contractor after award of the Contract, are considered to be requests for substitutions. Where the plans and/or specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use. Articles or products of similar characteristics may be offered for the approval of the Engineer, whose decision shall be final. Copies of complete descriptive data shall be furnished regarding all materials furnished by the Contractor, consisting of Dimension drawings, catalog references, product data, cost, and other information necessary to clearly identify and evaluate each article.

B. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent, connected, or other structures and equipment at his expense. the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall

be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. Where there is a deviation from the Specifications, the Contractor shall note it and state the reasons why a deviation is required.

D. Where engineer-recommended changes, substitutions or appurtenant work require engineering design, the Contractor shall have such design services performed. Those engineering design services shall be of an extent satisfactory to the Engineer, whose decision shall be final.

E. The approval of Pre-Approved product sheets, shop drawings and data will be general and shall mean that upon examination of the drawings, no variations from the approved project drawings and project requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined above. The City's review will not constitute an approval of dimensions, quantities and details of the material, equipment or item shown.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01380 CONSTRUCTION PHOTOGRAPHS AND VIDEO PHOTOGRAPHY

PART 1 – GENERAL

1.0.1 DESCRIPTION OF WORK

A. This section specifies the taking and submission of construction photographs and audio-video photography.

B. Prior to the delivery of any equipment, materials or supplies to the site of any work, or to the beginning of any of the construction work, the Contractor shall provide pre-construction photography as specified herein for the purpose of establishing the surface conditions existing in all of the areas to be affected by the construction of the Project.

C. Pre-Construction Photographs: The Contractor shall video/photograph the entire project site during normal working hours including all concrete and asphalt pavements, curb and gutter, fencing, landscaping to remain, structures to be demolished, and existing structures that are to be modified. All videos and photographs shall be date and time stamped and a digital copy submitted on a flash drive/memory stick or media acceptable to the Department prior to beginning construction activities. The video/photographs shall clearly identify existing site and structural conditions.

D. Ground photography shall consist of photographs and color video taping of surface features taken along the entire length of the Project and including all work, intersecting roadways and properties that will be impacted by the water service conversions.

E. The purpose of the color audio-video taping of the project is to provide the necessary information for restoration of surface features after completion of the Project. The Contractor shall be responsible for repairing any damage or defect not documented as existing prior to construction.

1.0.2 QUALITY ASSURANCE

A. Photographs shall be clean, sharp and clearly show details. Out-of-focus photographs will not be acceptable.

B. Digital photographs which are poorly lit or lack definition will not be acceptable

1.0.3 SUBMITTALS

A. Submit one (1) final digital file of each construction photograph and one (1) flash drive/memory stick or acceptable media with the video as follows:

1. Within fourteen (14) days of receiving Notice to Proceed

2. Number photographs in sequence beginning with the numeral one

PART 2 – PRODUCTS

2.0.1 SIZE AND QUALITY

A. Digital pictures and videos shall be compatible with City's software, color, 3½-inches by 5-inches.

B. Digital pictures and videos shall be compatible with City's software.

2.0.2 IDENTIFICATION

A. Each photograph shall be stamped with the following information stamped or typed on the back of the print:

CITY OF OPA-LOCKA WORKS DEPARTMENT
Contract No. _____
CONTRACTOR: _____
Photograph No. _____ Date: _____ Time: _____
Description: _____
_____
_____

2.0.3 QUANTITY

A. A minimum of twelve (12) photographs shall be taken prior to construction and twelve more each month until completion of the Work.

B. In the instance of a pipeline installation, take a minimum of one photograph each 200 feet or fraction thereof along the entire route of the main initially. During construction a minimum of one photograph every two hundred feet or fraction thereof of that portion of the main constructed during the month until completion.

C. The number of photographs required shall be at the sole discretion of the Engineer whose decision shall be final.

D. An increase in the number of photographs above the minimums shall not be cause for an increase in cost and no extra compensation will be allowed.

2.0.4 VIDEO PHOTOGRAPHY

A. Color audio-video shall be submitted on a flash drive/memory stick or acceptable media.

PART 3 – EXECUTION

3.0.1 INITIAL AND CONSTRUCTION PHOTOGRAPHY

A. Take pre-construction photographs of the entire site or route of the main after receiving the Notice to Proceed and prior to disturbing the site in any manner. Coordinate with the Engineer as to the vantage points and number of photographs required in Paragraph 2.0.3.

B. Photography During Construction: Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

C. Photographic equipment utilized shall be of sufficient quality to produce pictures capable of being enlarged without loss of definition or sharpness.

3.0.2 PHOTOGRAPHY DURING CONSTRUCTION

a. Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

3.0.3 VIDEO PHOTOGRAPHY

A. Coverage of Taping: Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, streets, signs, landscaping, trees, catch basins, fences, visible utilities and all buildings located within the work zone of the Project. Of particular concern are any existing faults, fractures, defects or other features. Audio description shall be made simultaneously with and support the video coverage.

B. Streets: shall be recorded by audio-video tape for the full width of the right-of-way, except where specifically noted otherwise by the Engineer.

C. Front, Side and Rear Yard Areas: shall be recorded by audio-video tape of properties impacted by the water service conversions.

3.0.4 LOCATION INFORMATION

A. All flash drives/memory sticks or other acceptable media shall be properly identified by number, location and project name in a manner acceptable to the Engineer.

B. A record of the contents of each flash drive/memory stick or acceptable media shall be supplied on a run sheet identifying each segment in the tape by location, i.e., street

viewing side, traveling direction, engineering stationing, and all referenced by tape counter numbers.

C. All video recordings shall begin with the date and time of recording, the project name, the sheet numbers of engineering stationing as shown on the plans, the name of the street, area or building being taped, the direction of travel and the viewing side. Houses and buildings shall be identified visually by house or building address, when possible, in such manner that the progress of the taping and the proposed system may be located by reference to the houses and buildings.

3.0.5 SITE RECORDING CONDITIONS

A. All audio-video taping shall be done during times of good visibility. No outside taping shall be done during periods of visible precipitation or when the ground area is covered with leaves or debris, unless otherwise authorized by the Engineer.

B. In order to produce the proper detail and perspective, adequate auxiliary lighting will be required to fill in shadow areas caused by trees, utility poles, road signs and other such objects, as well as other conditions requiring artificial illumination.

C. The average rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 60 feet per minute. Planning rates and zoom-out rates shall be controlled sufficiently so that playback will produce adequate clarity of the object being viewed.

END OF SECTION

01400 QUALITY CONTROL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The intent of this section is to emphasize the City interest in quality products being designed and installed within the time and cost considerations of the project. The Contractor shall have primary responsibility for providing Quality Control (QC) for project during both design and construction phases. Quality Control includes, but is not limited to, such functions as:

1. Assuring only latest revisions of design and other documents used for construction (e.g., Shop Drawings, catalog cuts, schedules) are being used by project staff.

2. Inspection of materials and equipment delivered to the site.

3. Inspection and maintenance of materials and equipment in storage.

4. In progress and Final Inspection of the constructed product.

5. Manufacturer's Certification of Installation for service intended.

6. Reporting on work in progress daily.

B. The Contractor shall have a QC System and sufficient QC staff, in place in the design team office and on the jobsite always that work is underway.

C. The Contractor is responsible for controlling the quality of the work, including that portion of the work performed by Engineer of Record, the Cogeneration system manufacturer and on-site Subcontractors. The Contractor is also responsible for assuring that suppliers and manufacturers providing materials and products to be incorporated into the work satisfy the specified quality, provide required documentation, and provide those services as specified within the technical portions of the specifications.

D. The Contractor shall develop and submit a Quality Control Plan which identifies the reporting structure of the QC organization, defines the procedures to be implemented by the Contractor to assure the specified quality is achieved, and details the daily reporting protocol. Within 20 calendar days of the Notice to Proceed (NTP), the Contractor shall submit their proposed Quality Control Plan. The Engineer will schedule a review meeting of the outline within one week of receipt of the plan outline. Final submission of the quality control plan shall be made no later than 10 calendar days following the review meeting.

E. The Contractor and Engineer will coordinate materials testing for cast-in-place concrete, earthwork, and paving.

1.0.2. MATERIALS AND EQUIPMENT

A. The Contractor shall maintain control over procurement sources to ensure that materials and equipment conform to specified requirements.

B. The Contractor shall comply with manufacturer's instructions regarding all facets of materials and/or equipment movement, storage, installation, testing, startup, and operation.

C. The Contractor shall prepare, complete, and maintain all equipment, pipe, and testing logs that document the dates and disposition of each specific test conducted. The logs will be comprised of a summary sheet that is corroborated by individual test report forms that document the specific tests. The individual test report form will be provided by the Engineer.

1.0.3. MANUFACTURER'S TECHNICAL REPRESENTATIVE

A. When specified in the technical specification sections, the Contractor shall arrange for and provide technical representation directly from the manufacturers of respective equipment items or components.

B. If, in the opinion of the Engineer, the Manufacturer's Representative fails to satisfy the terms of this Specification section, the Engineer may direct the Contractor to replace the Representative with a different representative, and those hours expended by the disapproved representative will not be counted against the service hours specified for the system/unit/component.

PART 2 – PRODUCTS

2.0.1. QUALITY CONTROL PLAN

A. The Quality Control Plan shall be a formal document prepared under the direction of the Contractor. The Plan will be the basis by which the Engineer will monitor the QC effort associated with executing the work.

B. The Plan shall address the Quality Control Organization and the roles each member of the organization plays in satisfying the quality requirements of the work.

C. Included within the plan will be basic guidelines associated with the checking and monitoring of work as it progresses and how the guidelines will be used by Contractor's supervisors and representatives to provide the required quality.

D. The process for notification of quality concerns shall be included in the Plan.

2.0.2. REPORTS

A. Monthly Quality Control Summary that addresses the following:

1. Certification by Contractor that all work not specifically cited by a Non-Conformance Report satisfies the requirements of the Contract Documents.

2. Summary table identifying all non-conformance notices and their respective current status.

B. Certificate of Proper Installation shall address installation of equipment items.

PART 3 – EXECUTION

3.0.1. QUALITY CONTROL

A. Quality control is the responsibility of the Contractor, and the Contractor shall maintain control over construction and installation processes to assure compliance with specified requirements.

B. Means and methods of construction and installation processes are the responsibility of the Contractor, and at no time is it the intent of the Engineer to supersede or void that responsibility. In the event there is a degree of uncertainty that the process observed or planned will accomplish the required quality, the Engineer will refer to the Quality Control Plan and initiate discussion with the person primarily responsible for the process or installation in question.

C. Prepare and submit weekly Quality Control activity reports to the Engineer.

D. Monthly Quality Control Summaries are to be prepared and submitted to the Engineer with the Contractor's Partial Payment request for the respective period.

END OF SECTION

01510 TEMPORARY UTILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide temporary facilities required, which may include, but not limited to, the following:

1. Contractor's field office, telephone and storage sheds.

2. Temporary water service.

3. Temporary sanitary service.

4. Temporary electrical service.

B. For additional requirements on Temporary Facilities refer to Section 01100 “Special Project Requirements”.

C. Requirements of Regulatory Agencies:

1. Obtain and pay for permits as required by governing authorities.

2. Comply with federal, state and local codes and regulations.

1.0.2. TEMPORARY ELECTRICITY

A. The City will not furnish electric power for this project. All electrical driven equipment, including electrical welders, shall be served by the temporary electrical service to be provided by the Contractor.

B. The Contractor shall supply extension cords, ground fault circuit interrupters, and safety equipment necessary to protect his workmen and plant personnel.

C. The Contractor shall obtain a power source for temporary electricity from electrical generators or other approved means. Furnish, install and maintain temporary electric power service for construction needs throughout construction site as necessary.

1. Power centers for miscellaneous tools and equipment used in construction work.

2. Power for construction equipment.

3. Power for testing and checking equipment.

4. Power for welding units and for other equipment having special power requirements.

D. Capacity:

1. Adequate electrical service distribution for construction use by all trades and Field Offices during construction period.

2. Notify FPL if unusually heavy loads, such as welding, pumps, high service temporary pump, and other special power requirements, will be connected.

E. Maintain strict supervision of use of temporary services.

1. Enforce conformance with applicable standards.

2. Enforce safe practices.

3. Prevent abuse of services.

1.0.3. TEMPORARY SANITARY FACILITIES

A. Furnish, install and maintain temporary sanitary facilities for use throughout construction period.

1. Enclosed toilet facilities for construction personnel.

2. General employee washing facilities.

B. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of Contractor's employees. Toilets at construction sites shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.

C. Minimum number of fixtures:

1. Toilets and Urinals:

For less than 20 employees: 1 toilet.
For 20 or more employees: 1 toilet and 1 urinal per 40 workers.

2. Washing Facilities: Adequate for number of employees, for type of work requiring washing facilities.

D. Maintain strict supervision of use of facilities:

1. Enforce conformance with applicable standards.

2. Maintain service and clean facilities.

3. Enforce proper use of sanitary facilities.

E. Cost of Installation and Operation:

1. Pay costs of temporary sanitary facilities, including costs of installation, maintenance and removal.

2. Costs of Water: As specified in Temporary Water.

3. Pay service charges for use of portable units.

F. Facility Locations:

1. Within the project site.

2. At Field Offices

3. Toilet and washing facilities:

Secluded from public observation.
Convenient for use of personnel in relation to work stations.

4. Obtain acceptance of the Engineer for all locations.

G. Enclosure for Toilet Facilities:

1. Weatherproof, sight proof, sturdy temporary enclosures.

2. Insect proof screening, adequate natural ventilation.

H. Sewer Connection: The Contractor shall coordinate with the City's Public Works Department for obtaining sewer connection and shall pay permit and sewer usage charges.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. General: Materials may be new or used, but must be adequate for purpose required, must be sanitary and must not violate requirements of applicable codes. Materials in contact with potable water must be AWWA/NSF 61 listed.

2.0.2. ELECTRICITY

A. Provide required facilities, including transformers, conductors, poles, conduits, raceways, breakers, fuses and switches.

B. Provide appropriate enclosures for environment in which used, in compliance with NEMA standards.

2.0.3. DRINKING WATER FACILITIES

A. Portable Containers

1. Tightly closed and equipped with dispensing tap.

2. Clearly label contents.

3. Do not use for other purposes.

4. Provide single service disposable cups, with sanitary container for unused cups, and receptacles for used cups.

2.0.4. SANITARY FACILITIES

A. Toilet Facilities:

1. Portable toilets; either:

a. Chemical toilets.

b. Reticulating toilets.

c. Combustion toilets.

2. Toilet Tissue: Provide at each toilet, on suitable dispenser.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Obtain Engineer's approval of planned installations.

B. Install work in a neat and orderly manner.

C. Make structurally sound throughout.

D. Maintain to provide continuous service.

E. Modify and extend service as work progress requires.

3.0.2. TEMPORARY WATER

A. Locate piping and outlets.

1. Provide service convenient to work stations.

B. Avoid interference with:

1. Traffic and work areas.

2. Materials handling equipment.

3. Storage areas.

C. Do not run piping on floor or on ground.

D. When necessary to maintain pressure, provide temporary pumps, tanks and compressors.

3.0.3. TEMPORARY ELECTRICITY

A. Service and distribution may be overhead or underground.

B. Locate to avoid interference with:

1. Traffic and work areas.

2. Cranes.

3. Material handling equipment.

4. Storage areas.

C. Do not run branch circuits on floor or on ground.

D. Wire all safety devices required for operation of equipment.

E. Check operation of safety devices.

3.0.4. TEMPORARY SANITARY FACILITIES

A. Portable Toilets:

1. Erect securely and anchor to prevent dislocation.

2. Service as often as necessary to prevent accumulation of wastes and creation of unsanitary conditions.

B. Washing Facilities: Provide faucet

3.0.5. REMOVAL

A. Completely remove temporary materials and equipment upon completion of construction.

B. Clean and repair damage caused by installation and restore to specified or original condition.

END OF SECTION

01530 PROTECTION OF EXISTING FACILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall exercise extreme care and protect all existing structures and utilities, when working in proximity so as not to disturb the structures. Repair or replacement of any property and/or structures damaged during the construction of this project shall be the sole responsibility of the Contractor. Costs involved in the replacement or repair will not be reimbursed by the City. The Contractor shall be responsible for coordinating his work with the work to be done by FPL or their Contractor.

B. Protection of Property Remaining in Place:
   1. Property obstructions which are to remain in place, such as buildings, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced. Any damage to such obstructions noted to remain in place shall be repaired by the Contractor at no additional cost to the City or Owner.
   2. Should structures be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

C. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

1.0.2. GENERAL CONSIDERATIONS

A. All cost for changing the grade of the proposed main downward two feet-six inches or less in order to clear obstructions located differently than shown on the plans, or to clear obstructions not shown on the plans but the location of which could have become known or should have become known by proper observation of field conditions or the proper exploratory procedure, shall be included in the prices bid under the various items of the Proposal and no additional compensation will be allowed.

B. Additional cost, if any, for changing the grade of the proposed main downward more than two feet-six inches, for the same reasons, will be paid for as "Extra Work" in accordance with "Extra Work and Payment Therefore" of the Special Conditions.

C. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

D. Where the Quotation contains Items for installing main in specific depth ranges, the main shall be paid for at the actual depth range installed. However, the provisions of paragraphs one and two of this Section shall apply and any depth increase caused by a lack of timely and sufficient exploration by the Contractor shall be at his expense. In such instance, the main shall be paid for as if installed at the invert elevations originally shown on the Plans.

E. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving, air release valve assemblies, and similar items for which a pay item was established in the Proposal, then such additional work and items will be paid for at the prices bid.

F. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

G. Where it is necessary to temporarily interrupt house or building services, the Contractor shall notify the house or building owner or occupant, both before the interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the Contractor shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Contractor shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved.

H. Various drainage culverts and drainage ditches may be encountered along the route of the work. Any culverts which are disturbed, damaged or removed shall be repaired, restored or reinstalled. The Contractor shall document any existing damage to the drainage systems, or if it needs cleaning, prior to doing any work in the vicinity, so he will not be held responsible. Drainage ditches shall be restored to the original cross sections existing prior to construction of this work. Ditches shall be left clean and free of all excavated materials or other materials deposited in them as a result of this construction. All existing headwalls, removed or damaged as a result of this construction, shall be restored as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the other items of the quotation.

I. All existing drainage structures and piping shall be considered clean at the start of construction. The Contractor shall check to verify that this is so. The Contractor

should notify the governing agency of any damaged or dirty structures or piping to avoid repair or cleaning at his expense. Copies of such notices shall be sent to the Engineer.

1.0.3. RELOCATION OF EXISTING UTILITIES

A. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

B. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer. There shall be no additional payment for adjustments in grades or location resulting from locations of existing utilities.

D. Various storm sewer lines and inlets and slab-covered drainage ditches that conflict with the proposed construction may require adjustment, relocation or removal and reinstallation. This work shall be performed as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the items listed in the quotation.

E. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the Specifications and the permitting documents.

F. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose and provide temporary support for all existing underground utilities and utility poles where necessary.

G. Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines, whether shown on the Plans or not. The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

1.0.4. PROTECTION OF UTILITIES TO REMAIN IN PLACE

A. The work area may have existing utilities, such as, but not limited to irrigation, phone, electrical, water, sewer, storm sewer, and gas lines. It shall be the responsibility of the Contractor to verify the location of all such utilities, structures, etc. by hand excavation or other appropriate measures before performing any work that could result in damage or injury to persons, utilities, structures, or property. The Contractor shall make a thorough search of the site for utilities before work is commenced in any particular location. The Contractor shall take special consideration to protect the existing water main, force main and power line along the project location to avoid service disruptions.

B. During construction, the Contractor shall protect the existing and proposed water main and force main using steel plates, as indicated in the drawings, until site work is completed and final grade is achieved. The Contractor shall be responsible for the repair of any damages caused to these pipes during construction at no additional costs to the City.

C. The Contractor shall take immediate steps to repair, replace, or restore all services to any utilities or other facilities which are disrupted at the fault of the Contractor. Further, the Contractor shall engage any additional outside repairs on a continuous “around the clock” basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in the repairs and restoring of disrupted service resulting from negligence on the part of the Contractor shall be borne by the Contractor and shall be fully responsible for any and all claims resulting from the damage.

D. Should utilities be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

E. Prior to the start of construction, the contractor shall comply with F.S. 553.851 for the protection of underground gas lines.

F. When power poles are adjacent to any proposed utility, the Contractor shall provide proper shoring or other suitable support during construction. The shoring and support methods shall be approved by the utility company engineering department. The cost of shoring will be included in the overall project cost.

G. The Contractor shall not purposefully disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the City. Requests for disconnection must be in writing and received by the City at least 72 hours prior to the time of the requested interruption.

1.0.5. PROTECTION OF TREES REMAINING IN PLACE

A. Construction can potentially damage the existing trees confined within the construction zone. Besides their aesthetic value, some trees are valuable and may be environmentally protected. Mangroves and mangrove associated species (as defined by Miami-Dade County Code of Ordinances) are the jurisdiction of Miami-Dade County and would fall under the Miami-Dade County Code of Ordinances, Chapter 24, Division II.

B. Trees can be an important part of the ecological environment of the surrounding area. Measures should be in place to protect trees whenever necessary, including conservation of the canopy.

C. Where directed by the City, desirable trees within the roadway area shall be trimmed, protected, and left standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give clear height of 14 feet over vehicular areas and 8 feet over pedestrian areas.

D. When pruning cuts or root pruning to existing trees is shown in the Plans, work is to be supervised on site by an International Society of Arboriculture (ISA) or American Society of Consulting Arborists (ASCA) Certified Arborist and performed in accordance with American National Standards Institute (ANSI).

E. All trees found within a FDOT designated road shall comply with the appropriate FDOT index for tree protection barriers. All other tree protection shall be in accordance with the

F. For all areas both inside and outside the earthwork area, the Contractor shall not deface, injury, or destroy trees, nor remove or cut them without prior approval via a tree removal permit from the City of Opa-Locka Any accidental damage to a tree shall immediately be reported to the City of Opa-Locka for evaluation for public safety and possible new and additional permit requirements/work. An after-the-fact tree removal permit may be required.

G. The Contractor shall understand all ANSI tree care standards prior to the start of earthwork. All necessary permitted above and below ground tree work shall follow the appropriate ANSI standards for tree care.

H. Tree relocation, when required, shall be in accordance with CITY CODE

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01540 DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND EQUIPMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish all material, labor, tools, equipment, plant, appliances and services necessary to complete all demolition, modification and relocation work required in the drawings and specified herein. Examine the various drawings, visit the site and determine the extent of work affected therein and all conditions under which he is required to perform the various operations.

B. The Work specifically covered under this Section consists of the removal and disposal of existing structure, appurtenances, concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter. The items to be removed shall be: (1) those items shown in the Plans to be removed; (2) those found within the limits of the area to be cleared and grubbed and directed by the City or designee to be removed; (3) those items which it is necessary to remove in order to construct new structures, utilities, and other appurtenances or obstructions which may be designated in the plans.

C. Demolition shall be constructed in such a way as to leave no obstructions to any proposed new structures or to any waterways. Pilings shall be pulled or shall be cut off or broken off at least 2 feet below the finish grade line. (In the event that the Plans indicate channel excavation to be done by others, the finish ground line shall be considered as the limits of such excavation.) For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed. Retaining walls and drainage structures are specifically not included in the Work covered under this Section.

1.0.2. GENERAL CONSIDERATIONS

A. Demolition, modification, removal and relocation work shall be coordinated with the City, shall be performed in an agreed upon sequence to minimize down time at the site.

B. Promptly remove all demolished materials and debris from the site. No demolished materials shall be kept at the plant site for more than 24 hours.

C. Demolition shall result in the complete removal and disposal of existing structures and appurtenances from the site as indicated on drawings and the cleanup after completion of the demolition work.

D. The cutting and removal of existing work necessary for modifications and installation of new work shall be made with a minimum of damage to the work that is to remain. Any damage done to existing facilities which are to remain shall be repaired at the Contractor's expense to the satisfaction of the City.

E. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.

F. Non-shrink grout shall be used for setting wall casting, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as required.

G. Follow other specific instructions for the modification work given in other sections of these specifications and/or as shown on the drawings.

H. Verify exact location, material, alignment, joint, etc. of existing piping and structure prior to making the modifications and connections called out in the drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.

I. Dismantle and remove all existing equipment, piping and other appurtenances required for the completion of the work. Where called for or required, cut existing pipeline for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removal shall be cut off one inch below the concrete surface. Surface shall be properly repaired and finished.

J. Where necessary or required for the purpose of making connections, cut existing pipelines in a manner to provide an approved joint. Where required, weld beads, flanges or provide the specified couplings, all as required.

K. Site shall be left in a clean condition satisfactory to the Engineer, free from demolished materials, rubbish or debris. Site shall be graded to meet adjacent contours and provide flow for surface drainage.

L. Restore items intended to remain that have been damaged by demolition work.

M. Items intended to remain that have been damaged by demolition work shall be restored to original or better condition.

N. All interrupted utility services shall be returned to service, and temporary services disconnected, unless otherwise specified.

PART 2 – PRODUCTS

2.0.1. STRUCTURES TO BE REMOVED

A. The work specifically covered under this Section consists of the removal and disposal of the material from existing structures.

B. The structures to be removed shall be:

1. Those structures, or portions of structures, shown in the plans to be removed.

2. Those found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed.

3. Those structures, or portions of structures, which it is necessary to remove in order to construct new structures, utilities and other appurtenances or obstructions which may be designated in the plans.

PART 3 – EXECUTION

3.0.1. METHOD OF REMOVAL

A. The structures shall be removed in such a way as to leave no obstructions to any proposed new structures or to any waterways.

B. For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed.

3.0.2. REMOVAL OF EXISTING PAVEMENT

A. The work specified in this Section consists of removing and disposing of existing concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter, where shown in the plans or directed by the Engineer to be removed or where required to be removed because of the construction operations.

B. Retaining walls and drainage structures are specifically not included in the work covered under this Division.

END OF SECTION

1-140

01550 SITE ACCESS AND STORAGE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Gravity Main Relocation work is to be performed along NW 133rd Street, between NW 42nd Avenue and NW 43rd Avenue, Opa-Locka, Florida 33054. The project's owner is the City of Opa-Locka.

1.0.2. EXISTING UTILITIES

A. Protection of, and relocation of existing utilities, structures and other facilities shall be in accordance with Specification *"01530 - Protection of Existing Facilities".*

B. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor, shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.3. SITE ACCESS AND STORAGE

A. The City reserves the right to enter upon, and to use, any and all portions of the work performed hereunder (or under its other Contracts), whether completed or not, as may be required.

B. Highway Limitations: The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the work. It shall be the Contractor's responsibility to construct and maintain any haul roads required for its construction operations.

C. Temporary Crossings: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, parking lots, Vehicular access to

all production facilities shall be maintained except when necessary construction precludes such access for reasonable periods of time.

D. Street Use: Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alleyway, or parking area during the performance of the work hereunder and it shall conduct its operations to not interfere unnecessarily with the City or any other authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed plant operations without first obtaining permission of the Engineer and the City. Where excavation is being performed in any streets, one lane shall always be kept open to traffic, unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the Engineer or the City. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment. Temporary provisions shall be made by the Contractor to assure the use of sidewalks and the proper functioning of gutters, storm drain inlets, and other drainage facilities.

E. Additional Facilities: Access to other facilities within the project site shall be allowed by the Contractor for City's staff conduct their operation and maintenance activities. Continuous, unobstructed, safe and adequate pedestrian and vehicular for the City's staff to access facilities within the project site such as the electrical building, emergency generator, water tanks and Pump Station 23 is required.

1.0.4. CONTRACTOR WORK AND STORAGE AREA

A. The Contractor may utilize private warehouse and/or office space as a storage area and/or construction field offices.

B. The Contractor shall submit to the Engineer for approval, a proposed plan and layout for all field offices, temporary facilities, and parking both for on the project site and on any additional lands obtained by the Contractor for its use during construction of the project. Prior to commencing any preparation remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, sprinkler systems, sod and all other existing installations. All these installations shall be restored to their initial conditions.

C. The Contractor shall construct and use a separate storage area for hazardous materials used in constructing the work.

1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are products labeled with any of the following terms: Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, 2 part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.

2. Hazardous materials shall be stored in groupings according to the Material Safety Data Sheets.

3. Contractor shall develop and submit to the Engineer a plan for storing and disposing of the materials above.

4. Contractor shall obtain and submit to the Engineer a single EPA number for wastes generated at the site.

5. The separate storage area shall meet the requirements of authorities having jurisdiction over the storage of hazardous materials.

6. Hazardous materials that are delivered in containers shall be stored in the original containers until use. Hazardous materials delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.0.5. PARKING

A. The Contractor shall be responsible for making its own arrangements for parking of its direct employees, Subcontractors, vendors, etc. as may be necessary either on site or offsite.

B. Traffic and parking areas shall be maintained in good conditions, free of excavated material, construction equipment, mud, and construction materials. The Contractor shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01560 TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP, Miami-Dade County Regulatory and the City's Environment and Sustainability Department.

B. All work defined by this Division, including work less than one (1) acre in size, that has the potential to impact the City's Municipal Separate Storm Water System (MS4), and/or adjacent properties, is required to employ sediment and erosion control measures that are in accordance with Florida Storm Water Erosion and Sedimentation Control Inspector's Manual, latest revision, and in accordance with Miami-Dade County Department of Environmental Resources Management.

C. All construction activity that results in the disturbance of equal to or greater than one (1) acre is required to obtain coverage under the Florida Department of Environmental Protection's Generic Permit for Storm Water Discharge from Large and Small Construction Activities (CGP).

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either Subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both, the City and other authorities with jurisdiction.

1.0.3. DUST ABATEMENT

A. All permittees, contractors, owners, operators, or other persons involved in construction activities shall refer to applicable sections of Local, State, and Federal regulations on dust control for additional guidance, including but not limited to the Miami-Dade County Code of Ordinances.

B. All persons involved in construction activities shall take measures to control dust from operations and prevent spillage of excavated materials on public roads.

C. All persons involved in construction activities shall remove spillage of excavated materials, debris, and dust from public roads by methods approved by the City or designee.

D. All persons involved in construction activities shall provide temporary dust-proof partitions where required to protect unaltered portions of existing structures and facilities and as directed by the City or designee. Temporary partitions shall be provided where demolition work is required to protect equipment and material and shall consist of plastic sheeting (6 mil).

E. All persons involved in construction activities shall apply water at locations, quantities, and frequencies required by the City or designee to control dust for nuisance prevention to the City and properties in the vicinity of the site. The frequency of watering will be determined by weather conditions and the erodibility of the soil. If additives in the water are used to increase its dust suppression properties, the chemical should have no adverse environmental impact on adjacent water bodies.

F. The Contractor shall prevent its operation from producing dust in amounts damaging to property or causing a nuisance to persons occupying buildings in the vicinity of the project Site. The Contractor shall employ measures to prevent fugitive dust. The Contractor shall be responsible for any damage resulting from dust originating from its operations.

G. Storage Piles: Enclose, cover, water (as needed), or apply non-toxic soil binders according to manufacturer's specifications on material piles (i.e. gravel, sand, dirt) with a silt content of 5 percent or greater.

H. Active Areas of Site: Water active construction areas and unpaved roads as needed and as requested by Engineer to prevent the propagation of dust.

I. Inactive Areas of Site: Apply non-toxic soil stabilizers according to manufacturer's specifications to inactive construction areas, or water as needed to maintain adequate dust control.

J. Vehicle Loads: Cover or maintain at least 2-feet of freeboard vertical distance between the top of the load and the top of the trailer sides on trucks hauling dirt, sand, soil, or other loose materials off of the site.

K. Roads: When there is visible track-out onto a paved public road, install wheel washers where the vehicles exit and enter onto the paved roads and wash the undercarriage of trucks and any equipment leaving the site on each trip. Sweep the paved street at

the end of each shift with a water spray pick-up broom-type street sweeper as necessary or as directed.

L. Vehicle Speeds: Maintain vehicle speeds to 10 mph or less.

M. Additional dust control BMPs include but are not limited to the following.

1. Prevention of dust generation is preferable to applying dust suppression measures. Ensure in the project schedule that the area of cleared land is minimized during the drier months of the year, when dust generation is at its greatest.

2. The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged. The soil shall be completely crusted over by application of water or completely covered with clean gravel or treated with an approved dust suppressant.

3. Ensure that smooth surfaces are deep ripped and left rough and cloddy to reduce the wind velocity at the soil surface.

4. Construct wind fences if appropriate for the site. As a contingency measure, in areas that do not have access to a water supply, water stored on-site should never be less than fifty percent of disturbed land surface. Wherever watering is used to suppress dust, ensure it does not create contaminated runoff that will contaminate surface waters.

5. Use barriers where required to prevent the migration of sawdust or particulates from sanding or surface preparation activities during construction.

1.0.4. SEDIMENTATION ABATEMENT

A. The Contractor shall be responsible for collecting, storing, hauling, and disposing of spoil, silt, and waste materials in compliance with applicable federal, state, and local rules and regulations and the Contract Documents.

B. Install and maintain erosion and sediment control measures, such as swales, grade stabilization structures, berms, dikes, waterways, filter fabric fences, and sediment basins.

C. Filter fabric barrier systems, if used, shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.

D. Remove and dispose of sediment deposits at the designated spoil area. If a spoil area is not indicated, dispose of sediment off-site at a location not in or adjacent to a stream

or floodplain. Sediment to be placed at the spoil area should be spread evenly, compacted, and stabilized. Sediment shall not be allowed to flush into a stream or drainage way.

E. Maintain erosion and sediment control measures until final acceptance or until requested by the Engineer to remove it.

1.0.5. RUBBISH CONTROL

A. During the progress of the work, the Contractor shall keep the site and other areas for which it is responsible in a neat and clean condition and free from any accumulation of rubbish. The Contractor shall dispose of rubbish and waste materials of any nature and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of rubbish and surplus materials shall be off the site in accordance with local codes and ordinances governing locations and methods of disposal and in conformance with applicable safety laws and the requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

B. It is important to maintain the construction site in a neat and satisfactory condition during the during construction and after construction has been completed. B. During construction, the Contractor shall regularly clean up all rubbish, surplus materials, and the adjacent areas affected. Unneeded construction equipment should be removed and all damages repaired so that the public and property owners will be inconvenienced as little as possible.

C. Any material or debris that has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes structures, or elsewhere during the course of the Contractor's operations must be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc., should, upon completion of the Work, be left in a clean and neat condition.

D. The Contractor shall perform the cleanup work on a regular basis and as frequently as ordered by the City or designee. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the City or designee, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.

E. Upon failure of the Contractor to perform periodic clean up and basic restoration of the site to the City or designee's satisfaction, the City or designee may, upon five (5) days prior written notice to the Contractor, employ such labor and equipment as it deems

necessary for the purpose, and all costs resulting there from shall be charged to the Contractor and deducted from amounts of money that it may be due.

F. On or before the completion of the Work, the Contractor shall tear down and remove all temporary buildings and structures; remove all temporary works, tools, and machinery or other construction equipment; remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around houses and other buildings; remove all rubbish from any grounds which has been occupied; and leave roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

G. Upon completion of the Work, the Contractor shall remove from the sites of the subsurface explorations all plant, machinery, tools, equipment, temporary work, and surplus materials; remove all rubbish from any grounds which has been occupied; and leave the roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

H. The Contractor shall thoroughly clean all materials and equipment installed, and, upon completion of the Work, deliver it undamaged and in fresh and new-appearing condition. All mechanical equipment should be left fully charged with lubricant and ready for operation.

I. The Contractor shall restore or replace, when and as directed by the City or designee, any public or private property damaged by work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, perform as required all necessary highway or driveway, walkway, and landscaping work. Suitable materials, equipment, and methods should be used for such restoration. The restoration of existing property or structures should be done as promptly as practicable as work progresses and should not be left until the end of the contract period.

1.0.6. SANITATION

A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: The Contractor shall establish a regular daily collection of sanitary and organic wastes. Wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with Laws and Regulations pertaining thereto.

1.0.7. CHEMICALS

A. Chemicals used on the work or furnished for facility operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.0.8. ADDITIONAL ENVIRONMENTAL CONSIDERATIONS – AFFECTED SOIL

A. Excavation of affected soil shall be accomplished as described in Section 02220 “Excavation – General".

B. Affected soil must be placed on an impermeable barrier when temporarily stockpiled. All stockpile leachate or runoff must be collected for disposal in accordance with applicable federal, state, and local regulations. Soils designated for removal and disposal shall be prepared for shipment, transported, and disposed of in accordance with the requirements of this Section.

C. Affected soils shall be processed at a state licensed facility. These soils shall be transported and disposed of in accordance with federal, state, and local regulations. The Owner shall be responsible for all soil analyses required for transportation and disposal.

D. The Owner shall be responsible for testing soil which has been incinerated to certify the treated soil meets applicable federal, state, and local regulations for final disposal.

E. Free Petroleum Product

1. Some free petroleum products which may be partly or entirely diesel fuel or gasoline may be encountered during excavation or removal of affected soil. The Contractor shall remove free petroleum product, if necessary, when a separate floating phase greater than 0.10-inch thick is present as required by health and safety considerations. The free petroleum product shall be removed by skimming, pumping to an oil/water separator, or other approved methods. The Contractor shall take reasonable precautions to ensure that solids are not entrained in the pumping process.

2. Free petroleum products shall be transported and disposed by the Owner in accordance with federal, state, and local regulations. The Owner is responsible for any laboratory analyses required for disposal of the free petroleum products.

F. Transport and Disposal

1. Transport Regulations: The Owner shall be responsible for the loading, labeling, placarding, marking, weighing, and transport of all waste materials in accordance with the Florida Department of Transportation Regulations, and U.S. Department of Transportation Regulations. The Owner shall use only transporters that are licensed and competent to haul these wastes.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01581 PROJECT SIGNS

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Project Signs

1. City's Responsibility: To supply, erect and remove signs.

2. Contractor Responsibility: To maintain signs and restore site.

PART 2 – PRODUCTS

2.0.1 PROJECT SIGNS

A. The City will supply signs for this Project. These signs will be produced, installed, and at the end of construction, removed by City's forces. During the construction period, the Contractor shall maintain the signs in good condition, satisfactory to the Engineer. Should the signs be defaced, damaged or destroyed, the Contractor shall be responsible for their repair or replacement to the satisfaction of the Engineer and no extra compensation will be allowed.

PART 3 – EXECUTION

3.0.1 MAINTENANCE

A. Maintain signs and supports and repair all damages to the satisfaction of the Engineer.

B. Restore site to original condition upon completion of Project.

END OF SECTION

01600 MATERIALS AND EQUIPMENT SHIPPING, HANDLING, STORAGE AND PROTECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This shall include both the City and Contractor supplied material and equipment.

B. The Contractor is to inform all Subcontractors, suppliers, and manufactures of the requirements herein specified and shall include expenses for the following services in his costs for compliance with the requirements hereinafter specified.

1.0.2. PREPARATION FOR SHIPMENT

A. When practical, equipment shall be factory-assembled. The equipment parts and assemblies that are shipped unassembled shall be furnished with assembly plan and instructions. The separate parts and assemblies shall be factory matchmarked or tagged in a manner to facilitate assembly. All assemblies are to be made by the Contractor at no additional cost to the City.

B. Machined and unpainted parts subject to damage by the elements shall be protected with an application of a strippable protective coating, or other approved protective method.

C. Equipment shall be packaged or crated in a manner that will provide protection from damage during shipping, handling, and storage.

D. The outside of the package or crate shall be adequately marked or tagged to indicate its contents by name and equipment number, if applicable; approximate weight; state any special precautions for handling; and indicate the recommended requirements for storage prior to installation.

1.0.3. PACKING AND DELIVERY OF SPARE PARTS AND SPECIAL TOOLS

A. Properly mark to identify the associated equipment by name, equipment, and part number. Parts shall be packaged in a manner for protection against damage from the elements during shipping, handling, and storage. Ship in boxes that are marked to indicate the contents. Delivery of spare parts and special tools shall be made prior to the time associated equipment is scheduled for the initial test run.

1.0.4. SHIPMENT

A. All equipment and material shall be shipped with freight and shipping paid FOB jobsite.

B. The Contractor shall request a 7-day advance Notice of Shipment from manufacturers, and, upon receipt of such notice, provide the Engineer with a copy of the current delivery information concerning equipment items and material items of critical importance to the project schedule.

C. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.

D. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.

1.0.5. RECEIVING

A. The Contractor shall unload and record the receipt of all equipment and materials at the jobsite.

B. All costs for receiving, inspection, handling, storage, insurance, inventory control, and equipment maintenance for both for both the Contractor-supplied and the City-supplied materials and equipment shall be included in the prices bid and no extra compensation will be allowed.

1.0.6. INSPECTION

A. Immediately upon receipt of equipment and materials at the jobsite, the Contractor shall inspect for completeness and any evidence of damage during shipment. Should there appear to be any shortage or damage, the Engineer shall be immediately notified; and the Contractor shall be fully responsible for informing the manufacturers and the transportation company of the extent of the shortage or damage. If the item or items require replacing or supplying missing parts, the Contractor shall take the necessary measures to expedite the replacement or supply of the missing parts.

1.0.7. HANDLING

A. Equipment and materials received for installation on this project shall be handled in accordance with the manufacturer's recommendations, and in a manner that will prevent damage.

B. Pipes shall always be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such a manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Pipe shall be stored on blocking or timber. It shall not be stored on rocks, boulders, or other supports which in the opinion of the Engineer are

unsuitable. Such materials shall be so placed as to keep obstruction to traffic to a minimum.

1.0.8. STORAGE AND PROTECTION

A. Equipment and materials shall be stored prior to installation as recommended by the manufacturer. Generally, materials such as pipe shall be stored off the ground in approved storage yards or along the line of the proposed pipeline as approved by the Engineer. Items subject to the damage by the elements, vandalism, or theft shall be stored in secure buildings.

B. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instructions shall be studied by the Contractor and he shall review them with the Engineer. Instructions shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.

C. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

D. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored, the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.

E. All bolts, nuts, gaskets and other joint materials for use in pipelines shall be stored under cover.

F. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light, oil gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

G. Plastic pipe and other elastomeric products shall be stored under cover to preclude damage by ultraviolet radiation even if the product has UV inhibitors in its compound.

1.0.9. INSURANCE

A. The Contractor's insurance shall adequately cover the value of materials delivered but not yet incorporated into the work. The Contractor and the City shall be named as co-insured insofar as their respective interests may appear. Proof of this coverage must be submitted to the Engineer at the time request for progress or partial payments.

1.0.10. INVENTORY CONTROL

A. Equipment and materials shall be stored in a manner to provide easy access for inspection and inventory control. The Contractor shall keep a running account of all materials in storage to facilitate inspection and to estimate progress payments for materials delivered but not installed in the work.

1.0.11. EQUIPMENT MAINTENANCE PRIOR TO THE CITYACCEPTANCE

A. Provide the required or manufacturer's recommended maintenance during storage, during the installation, and until such time as the City accepts the equipment for full-time operation.

1.0.12. SALVABLE EQUIPMENT

A. Any salvable pipe, or other miscellaneous material or equipment removed during construction and not reused in the work shall be cleaned, hauled, and stored by the Contractor at his own expense, where directed by the Engineer, and shall remain the property of the City. All other material shall be disposed of by the Contractor at his own expense.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01700 PROJECT CLOSEOUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work Included: This section outlines the procedure to be followed in closing all contracts.

1.0.2. RELATED SECTION

A. Section 01340 “Shop Drawings, Product Data, and Samples”.

B. Section 01720 “Project Record Documents”.

C. City of Opa-Locka General Covenants and Conditions.

1.0.3. FINAL INSPECTIONS

A. The City will not issue preliminary punch lists. After final cleaning and upon written notice from the Contractor that he has inspected the work and it is a 100% completed, the Engineer will make a preliminary inspection with the City and the Contractor present. Upon completion of this preliminary inspection, the Engineer will submit to the Contractor a written final punch list of any which this inspection reveals as defective or incomplete work.

B. Upon receiving written notice from the Engineer, the Contractor shall immediately undertake the work required to remedy the defects and complete the work to the satisfaction of the City.

C. Each item in the punch list shall have a time duration agreed upon by both parties which shall not exceed 10 calendar days. Punchlist items may be eliminated individually from the list when approved by the Engineer.

D. Should the Engineer find all work satisfactory at the time of the inspection, the Contractor will be allowed to make application for final payment in accordance with the provisions of the General Covenants and Conditions.

1. If the Contractor fails to complete any item of work within a time period equal to 100% of the agreed upon duration of time for all individual items, the Engineer will notify the Contractor in writing specifying the conditions pertaining thereto and directing the Contractor to comply with his directive. If the Contractor has not corrected such condition within 5 days of such notice, it shall be sufficient grounds for the Engineer to order the subject items discontinued and have them completely remedied in a timely manner at the expense of the Contractor.

2. No final estimate shall be issued by the Engineer until the Engineer has assured himself that the punch list has been 100% finished and all other related documents are submitted.

1.0.4. FINAL SUBMITTALS

A. The Contractor shall submit all closeout documents required by the Contract Documents, including but not limited to the following.

1. Warranties and guarantees

2. Test reports, including but not limited to:

a. Concrete test results certified by a licensed testing laboratory

3. Inspection and acceptance records

4. Operating and maintenance manuals

5. Project record documents

6. Permit closeout documentation

1.0.5. FINAL PAYMENT APPLICATION

A. Final payment application must include:

1. Final releases of liens from all subcontractors and suppliers

2. Final release from Contractor

3. Final consent of surety bond

4. The Contractor must obtain final Greenspace Management approval for installed landscaping

5. Upon receipt of Final Payment, the Contractor shall execute the Form of Final Receipt, if applicable

1.0.1. GUARANTEES, BONDS, AND AFFIDAVITS

A. No Contract will be finalized until all guarantees, bonds, certificates, licenses, roofing warranty, C.O. and affidavits required for work or equipment as specified are satisfactorily filed with the Engineer.

B. The Contractor shall comply with the Public Records Laws of the State of Florida.

1.0.2. ACCESSORY ITEMS

A. All Contractors furnishing and/or installing equipment and spare parts on this project shall provide to the City, upon acceptance of the equipment, all special accessories required to place each item of equipment in full operation.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01710 CLEANING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This Section specifies the maintenance of the work site in a clean, orderly, hazard free condition.

1.0.2. QUALITY ASSURANCE

A. Conduct cleaning and disposal operations in accordance with local ordinances and anti-pollution laws. Rubbish, volatile wastes, and other construction wastes shall be neither burned nor buried on the work site, and shall not be disposed of into storm drains, sanitary drains, streams or other waterways.

B. Final cleaning shall be accomplished either by workmen experienced in cleaning operations or by professional cleaners.

PART 2 – PRODUCTS

1.0.1. ON SITE WASTE CONTAINERS

A. Provide on-site waste containers for collection of waste materials, debris and rubbish. See Section 01100 “Special Project Requirements”, Subsection 1.0.4. regarding Safety Requirements for environmentally hazardous materials.

1.0.2. CLEANING MATERIALS

A. Cleaning materials shall be as recommended by the manufacturer of the surface to be cleaned.

PART 3 – EXECUTION

1.0.3. SAFETY REQUIREMENT

A. Maintain work site in accordance with local ordinances and anti-pollution laws applicable to work site cleanliness and in a neat, orderly and hazard-free condition until final acceptance of the work. Catwalks, accessible underground structures, work site sidewalks and walkways adjacent to the work site shall be kept free from hazards caused by construction activities.

B. Store volatile wastes including rags in covered metal containers and remove from work site daily.

C. Prevent accumulations of wastes which create hazardous conditions.

D. Artificially ventilate spaces which are not naturally ventilated when volatile or noxious substances are present in those spaces.

1.0.4. CLEANING DURING CONSTRUCTION

A. The Contractor shall at all times during the execution of this Contract keep the work site free and clear of all rubbish and debris. As soon as the work is completed, the accumulated rubbish or surplus materials shall be promptly removed. The Contractor shall also restore in an acceptable manner all property, both public and private, which has been displaced or damaged during the prosecution of the work and shall leave the site and vicinity unobstructed and in a neat and presentable condition.

B. In the event of delay exceeding two (2) days after written notice is given to the Contractor by the Engineer to remove such rubbish or materials or to restore displaced or damaged property, the Engineer may employ such labor and equipment as he may deem necessary for the purpose, and the cost of such work, together with the cost of supervision, shall be charged to the Contractor and shall be deducted from any monies due him. The Project shall not be considered as having been completed until all rubbish and surplus materials have been removed and disposed of properly.

C. Perform cleaning every workday for duration of the work. Structures, grounds, and areas of the work site, access roads and adjacent public and private properties shall be maintained free from accumulations of waste materials and rubbish caused by construction operations on the work site. Place waste materials and rubbish in on site containers or as otherwise approved. Unneeded construction equipment shall be removed and all damaged repaired so that the public and property owners will be inconvenienced as little as possible.

D. Remove or secure loose material on open decks and on other exposed surfaces at end of each day's work or more often to maintain work site in hazard-free condition.

E. Prevent dislodgement of materials due to wind and other forces. Wet down dry materials and rubbish to lay dust and prevent blowing dust. Cover or wet excavated material leaving and arriving at the site to prevent blowing dust. Clean the public access roads to the site of any material falling from the haul trucks.

F. Empty on-site waste containers whenever necessary so that trash overflow does not occur. Legally dispose of contents at either public or private dumping areas.

G. Control the handling of materials, debris and rubbish; do not drop or throw from heights.

H. Immediately remove spillages of construction-related materials from hauling routes.

1.0.5. FINAL CLEANING

A. In addition to the cleaning performed above, in preparation for final inspection, remove grease, dust, dirt, rust stain from surfaces. Remove labels, fingerprints and other

foreign materials from exposed exterior finished surfaces. Flush down all valve boxes, and areas leaving such surfaces clean of all sand, etc.

B. In preparation for final acceptance or occupancy, conduct final inspection and cleaning of exposed exterior surfaces, and of concealed spaces.

C. Maintain cleaning operations until project has been finally accepted.

END OF SECTION

01711 FINAL ACCEPTANCE

PART 1 – GENERAL

1.0.1. FINAL CLEANUP

A. At the completion of work and immediately prior to final inspection, cleaning of the entire project shall be accomplished according to the following provisions:

1. All temporary utility drops, fencing, and water supply outlets shall be removed.

2. All plant gate identification signs, barricades, tools, rubbish collection receptacles and other such items shall be removed by the Contractor.

3. All remaining earthen stockpiles of excess excavated material shall be graded to provide gentle slopes to prevent erosion as directed by the Engineer.

1.0.2. FINAL INSPECTION

A. Following final cleanup, the Contractor shall request an inspection by the Engineer, and Engineer of Record. If the Engineer accepts the work as being complete, then Final Acceptance shall be given to the Contractor in accordance with Contract.

1.0.3. FINAL ACCEPTANCE

A. Following successful final inspection, the Engineer shall approve the work as being complete and provide final acceptance of the work in accordance with the Contract.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01720 PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor is responsible for maintaining one record copy of:

1. Record Drawings. Record Drawings as used herein shall mean a drawing that reflects construction or design changes.

2. Record Specifications.

3. Addenda.

4. Change Orders and other modifications of the Contract.

5. Engineer's written orders or instructions.

6. Approved Shop Drawings (including product data and samples).

7. Field test records.

8. Construction photographs.

9. As-built dimensions and elevations as recorded on a daily basis by the Contractor's Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

10. Field Book. Survey Field notes taken by the PSM's survey crew (copy provided to the Engineer on a monthly basis)

11. The records listed above are always to be made available for the Engineer's review for all projects.

B. Vertical Datum: Nationwide, surveys and as-builts are in the process of conversion to NAVD 88 from the NGVD 1929. The City will accept NAVD 88 datum with a conversion factor on each page. The Florida Department of Transportation is using the NAVD 88 datum. Projects within FDOT roadway limits shall either use NAVD 88 datum or provide a conversion factor on each page if the NGVD 1929 datum is used. For projects using City of Miami datum provide a conversion factor on each page to the NAVD 88 datum.

1.0.2. MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain documents in a clean dry, legible, condition and in good order. Do not use record documents for construction purposes.

1.0.3. REQUIRED MEASUREMENTS

A. Set-up and Verification: The Contractor's PSM is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

B. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

C. The Contractor is required to have the PSM's survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

D. Field Book Information: The PSM is required to have his crews make daily visits to the Project site during underground pipe installation work to perform field measurements of the Contractor's daily installations. This information shall be recorded in field books. Copies of the field notes are required to be provided to the Construction Manager on a monthly basis. The PSM's field notes shall be submitted to the City along with partial as-built plans (signed and sealed) on a monthly basis as a condition of payment.

1.0.4. RECORDS

A. During the life of the Contract the Contractor shall retain the services of a PSM who shall maintain daily records of the installation, including all deviations from Plans and Specifications and for the purposes of preparing and submitting to the City an as-built/record survey in compliance with:

1. Florida Statutes Chapter 472.027.

2. Florida Administrative Code Chapter 5J-17.050, 5J-17.051 and 5J-17.052.

3. As further required by these Contract Documents.

B. Measure and Record all information for all projects concurrently with constructions progress.

1. The services of the PSM for the Project shall be retained by the Contractor prior to the issuance of the "Notice to Proceed." A letter from the PSM shall be provided at the Preconstruction Meeting indicating that the Contractor has secured his

services to perform all survey work for the duration of the project and prepare final as-builts plans.

C. Redline Drawings:

1. The Contractor shall maintain full size (22-inches by 34-inches) redline drawings to reflect the "record" items of work as the work progresses.

2. At a minimum, the redline drawings shall be reviewed on the 20th working day of every third month, or more often, as deemed necessary by Consultant, after the month in which the final Notice-to Proceed is given as well as on completion of Work. Failure to maintain the redline drawings up-to-date shall be grounds for withholding monthly progress payments until such time as the redline drawings are brought up-to-date.

3. Redline drawings shall be accessible to the City or designee at all times during construction period.

4. The cost of maintaining record changes, and preparation of the as-built record drawings shall be included in the unit prices bid for the affected items.

D. Label each document “PROJECT RECORD” in neat large printed letters.

1. Do not conceal any work until as-built information is recorded by the Contractor’s surveyor and, if so required, by the City surveyor.

2. All locations for future connections or tie-ins shall be left unburied and uncovered until the Contractor’s PSM measures and records the as-built information.

   a. All as-built and inspector information is to be made available to the Engineer daily for inclusion in the City records.

3. Restrained pipe, end line valves, thrust blocks shall be left uncovered for the last complete length. In line valves and tees shall be left exposed for one length on both sides plus the face end. Measure and record the elevation, horizontal and vertical alignment, and inclination for these items.

4. For all projects, the Contractor’s PSM shall maintain exact and extensive records of any deviations from the plans or specifications. These records shall be satisfactory to the Engineer, who’s decision shall be final, and enough to allow the production of accurate as-built plans which correctly and completely portray the work as constructed.

5. For all projects, the Contractor’s PSM shall record data as follows during the entirety of construction:

   a. For facility (e.g. a water or sewage plant, pumping station, or similar site if so, designated by City) projects, record as-built dimensions and elevations every

twenty-five feet or portion thereof along the pipeline and at every abrupt change in direction of the new line.

b. For pipeline projects, constructed in the public right-of-way dimensions and elevations every one-hundred feet or portion thereof along the pipeline and at every horizontal and vertical change in direction.

c. In all cases record locations and elevations for each valve, fitting, service line, fire hydrant, water sampling point, utility poles adjacent to the proposed line, overhead wires crossing the ditch line (approximate height above grade) and other appurtenances along the pipeline.

d. The identity, dimensions, location and elevation of any existing utility crossing the proposed line and so immediately adjacent to the new line as to be exposed by the excavation shall also be recorded. Locate, excavate expose and record the same data for any utility shown in the plans whose proximity to the proposed pipeline could affect the certification requirements of the new installation. Note that in instances of a very wide ditch due to ground conditions the recording of data for adjacent, paralleling, utilities shall only be required for lines which come within three (3) feet of the outside of the pipe being installed unless otherwise ordered by the Engineer who's decision shall be final.

e. Without exception, for all thrust blocks, the top elevation, outer dimensions, thickness of the block, length and location of any sheet piling, if used, shall be recorded by the Contractor's PSM.

f. Specific locations and elevation of equipment, the buildings and miscellaneous items installed inside them shall be recorded as applicable and as required by the Engineer.

g. Without exception, where the substitution of another piece of equipment for that shown on the plans has been allowed, the footprint, clearance and elevation dimensions shall be recorded by the Contractor's PSM and these changes shall be accurately and thoroughly portrayed on the as-built plans.

h. The Contractor's Licensed PSM shall prepare from the field data, as-built record drawings showing correctly, completely and accurately the installation, embracing all changes and deviations made during construction, including all construction variances, to reflect the work as it was constructed.

i. Record Drawings shall be prepared as specified hereinafter.

    1) Record Drawings shall be prepared as specified herein.

    2) Record Drawings and five (5) copies shall be signed and sealed by the PSM and shall be submitted to the City for the Engineer's review within

ten (10) calendar days following the completion date of successful pressure testing of all mains and appurtenances under this Contract.

j. If the Engineer determines that the drawings are not acceptable, they will be returned to the Contractor with a cover letter noting the deficiencies and/or reasons for the disapproval. Contractor shall have ten (10) calendar days to correct all exceptions taken by the Engineer and resubmit as-built record drawings to the Engineer for final acceptance.

1.0.5. DRAWINGS

A. During the life of the Contract, maintain records of all deviations from the plans and specifications and prepare therefrom As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Record Drawings for errors and omissions prior to submittal to the City and certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, Indicate the size, depth and voltage in each conduit.

B. Legibly Mark to Record Actual Construction: All data as previously specified for all installations by the Contractor's . For on-site structures and facilities work the Contractor's Florida Registered Land Surveyor shall record:

1. Depths of various elements of foundation in relation to datum plane.

2. All exposed and underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location, Horizontal and vertical locations of underground utilities and appurtenances, measured from permanent reference points, plant survey grids, property lines and similar.

3. Location of internal utilities and appurtenance concealed in the construction shall be referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.

4. Field changes in dimensions, locations and details.

5. Changes made by Engineer's written instructions or by Change Order.

6. Details not on original plans.

7. Equipment and piping relocations.

8. Major architectural and structural changes in structures, including tanks.

9. Architectural schedule changes according to Contractor's record and shop drawings.

10. Record drawings shall be prepared as specified hereinafter.

C. Specifications and Addenda: Legibly mark each section to record the following:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment installed.

2. Changes made by Engineer's written instructions or by Change Order.

D. Approved Shop Drawings: Provide record copies for system diagrams and drawings together with each element of process equipment, piping, electrical system and instrumentation system.

1.0.6. SUBMITTALS

A. Accompany submittal with transmittal letter in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name, address and phone number

4. Title and number of each Record Document

5. Contractor signature or of its authorized representative.

B. Record Drawings with five blue line copies which have been signed and sealed by the surveyor shall be submitted to the City for the Engineer's review. Drawings shall conform to recognized standards of drafting and the minimum technical standards as set forth by the Board of Professional Surveyors and Mappers, shall be neat, legible and on 24-inch by 36-inch Mylar. These materials shall be submitted to the City for the Engineer's review as a prerequisite for payment during the course of construction as previously specified and final, complete sets of documents within ten calendar days following the completion date of successful testing of all mains, equipment and appurtenances under this Contract. Final payment will not be made until the set of as-built record drawings and five sets of blue-line prints have been approved and accepted by the Engineer.

C. In cases where a portion of a pipeline system or parts of a process system are put into service, the above conditions shall apply for the in-service portion and monthly payments shall be withheld until the as-built drawings are accepted by the Engineer.

D. As-Built Record Drawings, as prepared by the Contractor's Florida Registered Land

Surveyor and submitted by the Contractor, shall comply with following criteria and standards, and as specified in Section 01725 “As-built Drawings”:

1. Title block must show the Contract or Project Title (as applicable); Contract number; City project number (if applicable); Contractor's name; Engineer of Record's name; Surveyor's name and address; date; location; and where appropriate to the work, size and type (i.e. water main, sanitary gravity main, sanitary force main) of main.

    a. Baselines or centerlines must be tied to section corners, monument line and right-of-way lines.

    b. Pipeline must be tied to baseline or centerline with stations and offsets.

    c. Baselines or centerlines must show bearings or deflection angles, or delta, radius, chord and arc length for curves.

    d. Show all horizontal curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

    e. Stationing must be the same as shown on construction drawings and must be tied to Section corners, centerline intersections and all other pertinent control points within the project. All such pertinent points shall have their stationing shown and where there is dual stationing for a point, both stations shall be called out.

    f. Identify all streets by name or number and show stationing at all intersecting streets.

    g. Refer to vertical datum plane and identify the location, elevation and source supplying the benchmark used.

    h. Tie easement lines to survey baseline or platted centerline and rights-of-way.

    i. Show horizontal and vertical locations of all fittings, deflections, or at any significant change of direction, and at a maximum of 100-foot intervals along the pipeline for off-site (e.g. in the public right-of-way) and at maximum 25-foot intervals for on-site (e.g. on a facility such as a pump station or plant) work.

    j. Elevations of natural ground or pavement over the pipeline must be shown at each position where the pipe elevation is shown and at intervening high and low points.

    k. Show all invert and bottom elevations of pipes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

l. Locations and elevations together with diameter, thickness and material of all casings.

m. Location, top and bottom elevations of all sheeting left in place.

n. Coordinate values used inside plants shall be the local, City established coordinate systems referenced to the property boundary.

E. Update of Construction Documents:

1. All "proposed" information shall be removed from as-builts, leaving only "as-built" information reflected in drawing.

2. Upon completion of the Work, the Contractor shall furnish the Consultant the as-built record drawings. Pay request quantities must match as-builts record drawings. The completed as-built record drawings shall be delivered to the Consultant at least 48 hours prior to final inspection of the work. The final inspection will not be conducted unless the as-built record drawings are in the possession of the Consultant.

3. The City reserves the right to have a Registered PSM perform spot checks of as-built information provided by the Contractor. The City shall pay the costs of such survey work when the work is performed by a City of Opa-Locka Contractor. Should any spot checks indicate that any portion of the installation does not comply with the Contract Documents, a recheck shall be performed by another (or third) Registered PSM or agreed to by both the City and Contractor at the Contractor's expense. If the recheck confirms the first check, that portion of the work shall be removed and replaced or modified at no additional cost to the City until satisfactory compliance is attained.

F. Certification: The Contractor shall certify on as-built record drawings all other actual constructed details and information as may be required by the City including but not limited to:

1. Pipeline must be identified by type of pipe material and manufacturer.

2. Types and sizes of sheeting and piling together with measured and complete; location, dimensional and elevation data on any pile caps, tie backs, anchors, whalers or other appurtenant structures left in place.

G. Digital Records: The City reserves the right to require submittal of as-built drawings in AutoCAD format and in PDF format. The AutoCAD file shall be compatible with the City's system and capable of being uploaded without external reference files. Graphical information contained on electronic media shall be the same as provided on plan sheets. Digital Records shall be delivered to the office of the City Engineer, Engineering Division, Opa-Locka Public Works Department at 12950 NW 42 Ave in Opa-Locka, FL 33054. A letter of transmittal shall be provided, containing a list of all files and data being provided.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section shall serve to set out guidelines for as-built drawings submitted to City of Opa-Locka.

B. To ensure that as-built drawings may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The City of Opa-Locka Public Works Department will consider the following elements during as-built during review to ensure the quality of the as-built drawings.

C. The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice established in Chapter 5J-17.050 to 5J-17.052 of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes. The approved final record as-built shall be used as part of the City of Opa-Locka's GIS and Record System.

D. The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

E. As-built drawings shall be prepared in a professional manner consistent with common engineering standards for layout, lettering, and line-work.

F. As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

G. Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

H. As-built drawings shall include all disciplines in the Bid Set drawings.

1.0.2. CRITERIA FOR AS-BUILTS

A. Horizontal: All horizontal control and locations shall be tied to the Florida State Plane Coordinate System, East Zone (NAD 83/2011).

B. Vertical Datum: All vertical control and elevations shall be referenced to National Geodetic Vertical Datum of 1929 (NGVD 1929).

1.0.3. AS-BUILT REVIEW PROCESS

A. SUBMITTAL PACKAGE

The following shall be submitted as one package in order to be accepted for initial

review by the Inspections Unit.

1. Initial submittal (prior to performing field testing) shall include the following: 1 set of signed and sealed as-built (DWFX file), signed and sealed field book information, DWFX file of the as-built and the City Minimum Requirements As-built Plan Submittal.

2. Final submittal shall consist of corrected As-Built Documents in digital format (AutoCAD and DWFX files) and the following sets of signed and sealed as-builts sets:

   Five (5) sets.
   Signed and Sealed Copy of Field Book Information.
   As-builts signed and sealed by the Florida Licensed Professional Surveyor and Mapper and/or Engineer of Record must comply with format requirements.

B. CITY PROCESSING.

1. The City will require Ten (10) business days to perform the as-built review.

2. As-builts will be initially checked by the responsible Field Inspector to verify that they are an accurate representation of the work as installed and that the job as shown is complete and in accordance with the permitted plans.

3. Following the Field Inspector's review, as-builts will be reviewed in depth by the As-Built Reviewer to ensure compliance with these standards. The Reviewer will also check the complete package which includes the Bill of Materials.

C. PUNCH LIST

1. Punch List items may be generated from the City initial review. Successive reviews are solely for the purpose of ensuring that original punch list items are completely and correctly done to obtain a final As-built acceptable to the City.

2. Successive punch list items may only be added to correct a problem resulting from submitter's efforts to comply with the original punch list. No new original punch list item(s) may be added. Submitter shall be required to make these successive changes.

3. In the case of an oversight on the part of the As-built Reviewer, punch list items may be added to the list or requested of the submitter after the valid time for such items. The City requires that all corrections be made as a condition of accepting the final as-builts.

4. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. Annotations to the Contract Documents shall be made with an erasable colored pencil conforming to the following color code:

Additions - Red
Deletions - Green
Comments - Blue
Dimensions - Graphite*

*Legibly mark to record actual depths, horizontal and vertical location of all above and below grade structures, underground pipes, valves, raceways, cables, and appurtenances referenced to permanent surface improvements.

1.0.4. AS-BUILTS SUBMITTAL REQUIREMENTS

A. GENERAL REQUIREMENTS

1. Prior to final acceptance, two (2) copies of as-built drawings certified by a Florida Registered Land Surveyor shall be provided to the City for approval, acceptance and certification by the "Engineer of Record", together with a copy of digital media producing such As-Builts.

2. At minimum, the As-Built must show Station numbers and horizontal offsets from the Base Line and Right-of-Way lines on a Plan scaled 1"=20 ft. for all fittings, valves and changes in horizontal alignment, and a profile with a vertical scale of not less than 1" = 2 ft. with elevations at all horizontal and vertical changes in alignments and grade profile elevations at approximately 50 ft.

3. As-Built plans and profiles must also show all abandoned pipes and plugs that were modified within the project limits and actual elevation/description of all other utilities crossing or encountered in the vicinity of the new water mains. The paper size of the drawings shall be 22"X 34".

4. Any deviations from the design plans must be approved by the City.

B. QUALITY OF AS-BUILTS

To ensure that as-builts may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The As-built Reviewer will consider the following elements to ensure the quality of as-builts.

1. Accuracy: The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice of the Florida Administrative Code. The approved final record as-built shall be used as part of the City GIS and Record System.

2. Field Changes: The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

3. Appearance: As-builts shall be prepared in a professional manner consistent with common engineering standards for layout, lettering and line-work.

4. "Understandability": As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

5. Clarity: Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

1.0.5. AS-BUILT CONTENT REQUIREMENTS – ALL DRAWINGS

A. All drawings submitted to the City of Opa-Locka Public Works Department shall include at a minimum the following, where applicable.

1. Centerlines, right-of-way lines, right-of-way dimensions, street widths and names, with matching plat, if applicable, subdivision name, phaseline, and number. (Phasing to be nearest valve and manhole in limits of phase area).

2. Baselines, monuments, monument lines, lot lines, parcel lines.

3. All involved lots and blocks shown and correctly designated (to match plat).

4. All control lines identified (i.e., centerline, section line, etc.). Identify all streets by name or number and show stationing at all intersecting streets.

5. Baseline shall be tied to centerlines, boundary lines, section corners, or to monument lines or to right-of-way lines. Baselines must show bearings or deflection angles, or delta, radius, chord, and arc length for curves.

6. Pipeline installation shall be tied to a baseline that easily identified on the existing or proposed right-of-way. Baseline shall not be on top of the main except for gravity sewers installed on centerlines.

7. Show all existing water, sewer and/or stormwater mains as a broken line (i.e., dashed). Show proposed utility as dark solid line. Also, identify respective utility pipe, size, and material type. Existing or proposed mains 20-inches in diameter and greater, shall be shown as two lines (i.e., double line) of the line type as stated.

8. Show all horizontal and vertical curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

9. Easements:

a. Easements type and size shall be clearly shown with size and tied to centerline. The easements shall be separate for water, sewer, force main, and pump stations.

b. Existing Official Record Book (ORB) or other record information must be shown.

c. Easement lines shall be tied to the centerline of the main.

10. Separate profile for each segment and utility type (water, sanitary sewer, stormwater, etc.).

11. Every utility (water, sewer, sewer laterals, water services, gas, electric, stormwater, telecommunication, duct banks, etc.) encountered and/or crossing drainage, water, or sanitary sewer facilities (whether it is a conflict or has sufficient clearances) shall be located, both horizontally and vertically. The clearance between the facilities horizontal and vertical, shall be noted. For instance, if a 2-inch gas main crosses over the top of a 6-inch potable water main, the bottom elevation of the gas main shall be noted and the top of the water main shall be noted. The difference between the two facilities will be the clearance between the two facilities. Parallel mains shall note the clearance between the outside of the mains. It shall be the Contractor's responsibility to note these crossings on a daily basis and ensure that this information is reflected on the As-Built Drawing plan set. Crossings will not require state plane coordinates.

12. All utilities shall be stationed and all facilities labeled. Drawings shall show stations for all services. Lengths and distances for service runs shall also be given.

13. Clearly show and label what is new and what is existing at the tie-in points.

14. Show all outlets, stub-outs, sewer lateral, water service and any other relevant information. Identify the size, material, length, direction, and elevation (top of pipe for water, sewer, and stormwater and force mains, invert gravity sewer and stormwater mains).

15. Elevations of natural ground or pavement over pipelines shall be shown at each position where the pipe elevation is shown at least every 100 feet.

16. Manhole rim and valve box manhole rim elevations shall be shown.

17. Show all invert and bottom elevations in manholes and valve vaults or boxes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

18. Locations, elevations, and size of all casings shall be shown.

19. Locations and top and bottom elevation of all sheeting, including sheeting left in place, shall be shown.

20. Provide State Plane Coordinate values for all visible features such as valves, manholes, maintenance access structures, fire hydrants, water meters, cleanouts, and backflow preventers. Also provide State Plane Coordinate values for existing valves and manholes at points of connection or closest to the point of connection and the point of connection itself.

21. Lines that are abandoned in place shall be located during construction and clearly identified (dashed and bold line type) on the drawings to include cut and plug locations and pipe material.

1.0.6. AS-BUILT CONTENT REQUIREMENTS – PAVING, GRADING, AND DRAINAGE DRAWINGS

A. Paving, grading, and drainage drawings shall include at a minimum the following, where applicable.

1. All existing and proposed utilities in the public right-of-way shall be shown on the paving, grading, and drainage plans. All utilities shall be identified and located by dimension, horizontally and by elevation, and their materials of construction shall be noted to the extent determinable without excavation.

2. Cross-section(s) and/or typical section(s) of proposed road and drainage construction, shall show dimensions, materials, and purposes of all existing (to remain) facilities as well as all proposed facilities within the right-of-way.

3. Pavement marking and signing drawings shall include sign locations.

B. All rock elevations for parking lot, roadways, and swale areas shall include at a minimum the following.

1. Rock elevations at all high and low points, and at enough intermediate points to confirm slope consistency and every 50 feet for roadways.

2. Rock elevations shall be taken at all locations where there is a finish grade elevation shown on the design plans.

3. All catch basin and manhole rim elevations shall be shown.

4. Elevations around medians will also be required.

5. Elevations shall be taken on all paved and unpaved swales prior to placement of asphalt and/or topsoil/sod, at enough intermediate points to confirm slope consistency and conformance to the plan details.

C. Retention area elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be as-built as well.

1.0.7. AS-BUILT SURVEY

A. An as-built survey will be required upon completion of all construction projects that lay within City-owned properties, including, but not limited to, City rights-of-way, easements, parcels, and submerged lands, etc. All improvements, including but not limited to, landscaping will be required.

B. As-built surveys shall be prepared in accordance with FAC Chapter 5J-17.051 and all applicable Standards of Practice.

C. When performing as-built surveys, the surveyor and mapper shall obtain field measurements of vertical or horizontal dimensions of constructed improvements so that the constructed facility can be delineated in such a way that the location of the construction may be compared with the construction plans.

D. As-built survey maps shall clearly show by symbols, notations, or delineations, those constructed improvements located by the survey.

E. The vertical and horizontal accuracy of the measurements made shall be such that it may be determined whether the improvements were constructed consistent with planned locations.

F. The Surveyor shall be responsible for the location, establishing or replacement of Vertical and Horizontal Survey Control Points.

G. Complete topographic and boundary survey for the project shall be signed and sealed by the Florida Licensed Professional Surveyor and Mapper as part of the as-built plans. All information required of a boundary survey shall be contained on the as-built plans to include the legal description of the site, easements and rights-of-way abutting the site and location of all surface facilities recorded by a PSM. All utilities within the property shall be properly shown, along with their associated elevation and clearance.

1.0.8. CERTIFICATION

A. All as-built drawings are to be certified to the City of Opa-Locka Public Works Department and all sheets are to be signed and sealed as previously outlined.

B. As-builts shall include a signed, sealed, and dated certification statement by the responsible Florida Licensed Professional Surveyor and Mapper that all measurements were recorded under his direction and are accurate.

C. Any civil drawings that are not surveyed shall also be included in the set and shall be signed and sealed by the Engineer of Record.

D. As-builts that contain electrical, mechanical, or structural work shall also be signed and sealed by the Engineer of Record to indicate that the work was constructed as designed.

E. It is the responsibility of the Contractor to check the as-builts for errors and omissions prior to submittal to the City and certify in writing that the as-builts are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, indicate the size, depth, and voltage in each conduit.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01730 OPERATING AND MAINTENANCE INSTRUCTIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Prepare Operating and Maintenance (O & M) Manual covering all equipment and systems provided under this project.

B. Instruct the City's personnel in the operation of equipment and maintenance provided under this project.

C. This Section covers the services of the manufacturer's representatives and special coordinating services required of the Contractor that shall apply during construction, facilities startup, and training of the City's personnel for facilities operation.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.2. SUBMITTALS

A. Not later than 30 days after the start of Construction, submit for review and approval by the Engineer two copies of a preliminary draft of the O&M manual, showing the proposed format and an outline of the contents.

B. Throughout construction, prepare O&M sections for equipment and systems when such equipment and systems, and shop drawings and technical data therefor, are approved. Within 30 days following receipt of the Engineer’s approval of the final shop drawing submittal, submit, in duplicate, draft of complete O&M Manual for review and approval of Engineer.

C. Within 30 days after receipt of Engineer’s review comments, make required revisions and submit in final form two copies of the O & M Manual for final approval.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.3. FORM, FORMAT AND SUBMITTALS CONTENTS

A. Operating and maintenance manuals will be used for use by the City personnel in the operation and maintenance of the various systems.

B. The City shall be furnished with one set of any special tools required for servicing for

each type of equipment actually furnished. These tools shall be provided to the Pump Station Maintenance Division.

C. Prepare data in the form of an instructional manual for use by the City personnel.

D. Format:

1. Size: 8½ in. x 11 in.

2. Paper: 20-pound minimum, white, for typed pages.

3. Text: Manufacturer's printed data or neatly typewritten.

4. Drawings:

a. Provide reinforced punched binder tab, bind in with text.

b. Fold larger drawings to the size of the text paper.

5. Provide fly-leaf for each separate product, or each piece of operating equipment.

a. Provide typed description of product, and major component parts of equipment.

b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:

a. Title of Project.

b. Identify of separate structure as applicable.

c. Identity of general subject matter covered in the manual.

E. Binders

1. Commercial quality three-ring binders with durable and cleanable plastic covers.

2. Maximum ring size: As required (Minimum 1½-inches).

F. Content of Manual

1. Neatly typewritten table of contents, arranged in a systematic order.

a. Contractor, name of responsible principal, address and telephone number.

b. A list of each product required to be included, indexed to the content of the volume.

c. List, with each product, the name, address and telephone number of:

1) Subcontractor or installer.

2) Maintenance Contractor, as appropriate.

3) Identify the area of responsibility of each.

4) Local source of supply for parts and replacement.

5) Identify each product by product name and other identifying symbols as set forth in Contract Documents.

G. Product Data:

1. Include only those sheets which are pertinent to the specific product.

2. Annotate each sheet to:

a. Clearly identify the specific product or part Installed.

b. Clearly identify the data applicable in the installation.

c. Delete references to inapplicable information.

H. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:

a. Relations of component part of equipment and system.

b. Control wiring, schematic wiring, and flow diagram.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.

3. Do not use Project Record Documents as maintenance drawings.

I. Written text, as required to supplement product data for the particular installation:

1. Organize in a consistent format under separate headings for different procedures.

2. Provide a logical sequence of instructions for each procedure.

J. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for City's personnel, give:

a. Proper procedures in the event of failure.

b. Instances which might affect the validity of warranties or bonds.

1.0.4. MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and tests.

c. Complete nomenclature and commercial number of all replaceable parts.

2. Operating Procedures:

a. Start-up, break-in, routine and normal operating instructions.

b. Regulation, control, stopping, shut-down, and emergency instructions.

c. Special operating instructions.

3. Maintenance Procedures:

a. Routine operations.

b. Guide to "trouble shooting".

c. Disassembly, repair, and reassembly.

d. Alignment, adjusting, and checking.

4. Servicing and lubrication schedule:

a. List of lubricants required.

5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, illustration, as drawings and diagrams required for maintenance.

a. Predicted life of parts subject to wear.

b. Items recommended to be stocked as spare parts.

8. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

9. Other data as required under pertinent sections of specifications.

B. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and test.

2. Switchgear, transformers, and motor control centers.

a. Coordination summary.

b. Relay settings.

c. High voltage switch instructions.

d. High voltage cable termination and splice instructions.

3. Operating procedures:

a. Routine and normal operating instructions.

b. Special operating instructions.

4. Maintenance procedures:

a. Routine operations.

b. Guide to “trouble-shooting”.

c. Disassembly, repair and reassembly.

d. Adjust and checking.

C. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

D. Additional requirements for operating and maintenance data: The respective sections of Specification.

1.0.5. SUBMITTAL OF MANUALS

A. Two draft copies of the complete operating and maintenance manual shall be submitted for review by the Engineer within 30 calendar days after approval of all shop drawings. One copy will be return to the Contractor within 30 days after receipt by the Engineer.

1.0.6. POSTED OPERATING INSTRUCTIONS

A. General: Operating instructions and diagrams shall be prepared for posting near the equipment. Posted operating instructions shall be photographic or equal non-fading reproductions framed under glass encased in non-discoloring plastic and shall be mounted in location directed. Copies of the posted operating instructions shall also use with the operating and maintenance manuals as a basis in training employees in the operation and maintenance of systems and related equipment installed.

B. Contents: Posted operating instructions shall consist of simplified, consolidated equipment, control and power diagrams graphically representing the entire system and actual equipment installed, including concise written instructions on how to start and stop systems, what settings and conditions are to be observed and what control adjustments are to be made or maintained by the operation.

1.0.7. MANUFACTURES'S NAMEPLATES

A. Each major component of equipment to have manufacturer's name, address, model number and rating on a plate securely affixed in a conspicuous place. Nameplate of a distributing agent will not be acceptable in lieu of manufacturer's nameplate.

B. Nameplate shall be die-stamped, engraved, or etched to guarantee long term legibility.

1.0.8. GUARANTY/WARRANTY

A. The Contractor shall guarantee that all new equipment has the capacity specified and that it will operate without excess noise or vibration.

B. Contractor shall furnish a written guarantee covering all workmanship and materials for a period of one (1) year, from the date of acceptance. This shall include an agreement to repair or replace, at his expense, all defects that may appear in that time, which in the opinion of the Engineer, are due to defective workmanship or materials.

C. Copies of factory warranties on all equipment furnished shall be submitted with the above described, written guarantee period, and included in maintenance manuals.

1.0.9. OPERATING AND MAINTENANCE RESPONSIBILITY

A. Contractor shall provide all required service and maintenance on all equipment installed under this contract for one (1) year following final acceptance or the beginning of beneficial use by the City. The starting date of one (1) year service period shall be determined by the City. Included in the service and maintenance to be provided during this one (1) year period, shall be the following:

1. All required lubrication, adjusting belt tensions, eliminating excessive noise and vibration.

2. Correcting all electrical and mechanical faults, recording all permanent installed gauge meter and temperature readings.

3. General service items, including the answering of service calls.

B. Service during construction:

1. General: Competent and experienced technical representatives shall represent the manufacturers of all equipment and systems as many days as may be necessary to resolve assembly or installation problems at the worksite which are attributable to, or associated with, the equipment furnished. This requirement applies to manufacturers of all equipment furnished, whether or not specifically set forth in the Technical Specifications.

2. Manufacturer's Certificate of Proper Installation: Where called for in the Technical Specifications, the manufacturer's representative shall provide a certificate stating that the equipment or system has been installed in accordance with the manufacturer's recommendation and has been inspected by a manufacturer's authorized representative, that it has been serviced with the proper initial lubricants, that applicable safety equipment has been properly installed, and that the proper electrical and mechanical connections have been made.

C. Functional testing assistance:

1. Where functional (or run) testing is called for on the Technical Specifications, the manufacturer's representative shall assist with the initial test, which shall include checking for proper rotation, alignment, speed, excessive vibration, and noisy operation. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative. The previously specified Manufacturer's Certificate of Proper Installation shall include the statement that proper adjustment has been made and that the equipment or system is ready for plant startup and operation.

2. The Contractor, as applicable to the equipment furnished, shall state in writing that all necessary hydraulic structures, piping systems, and valves have been successfully tested; that all necessary equipment systems and subsystems have been checked for proper installation, started, and successfully tested to indicate that they are all operational; that the systems and subsystems are capable of performing their intended functions; and that the facilities are ready for startup and intended operation.

3. Training of Owner's Personnel:
Where called for in the specifications, the manufacturer's representative shall provide detailed instructions to the City personnel for operation and maintenance of the specified equipment. These training services shall include pre-startup

classroom and onsite equipment instruction and/or post-startup classroom and onsite equipment instruction, as stated in the specifications.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Where the City has obtained various permits for this Project, copies will be appended at the rear of the Specifications.

B. The Contractor shall familiarize himself with, and comply with, all requirements of these permits and their issuing authorities. All other necessary permits shall be obtained by the Contractor.

C. The Contractor's particular attention is called to any special conditions of the permits relating to construction procedures, excavation and backfill requirements, open trench restrictions, asphalt concrete pavement restoration, turbidity controls, and all other general and special conditions. In the event any of the conditions of the permits are in conflict with the requirements of these Specifications, the more stringent conditions of the permits shall take precedence.

D. Any deviations from the Plans, Specifications or permits appended thereto, must first be approved by the Engineer even if approval for the change has been given by the permitting agency.

E. The Contractor shall assume throughout the life of the Contract all obligations and responsibilities imposed on the City as permittee of the aforementioned permits. All expenses necessary for compliance with the regulations and requirements of each permitting agency and its permit shall be borne by the Contractor and shall be included in his overall bid price.

F. The cost of any fees such as impact fees, inspection fees, etc. and the cost paid for all required permits shall be borne by the City. The Contractor shall pay the required fees, obtain the permit(s) and then upon submission of proof of cost to the City, be reimbursed for said cost out of the Permit Fee Dedicated Allowance Item. This shall apply only to required permits and fees. Permits obtained or fees paid for the advantage of the Contractor or non-required permits obtained for whatever reason shall not be reimbursed. The necessity or non-necessity of a permit or fee shall be determined by the Engineer whose word shall be final. As specified in the paragraph above, all costs of compliance with the permit(s) shall be borne by the Contractor and included in his bid price.

G. All surveying required by the Project permits shall be done by the Contractor's Registered Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall be responsible for providing the Engineer with Maintenance of Traffic (M.O.T.) plans for lane closures and/or detours for approval. These M.O.T. plans shall be produced by an individual employed by the Contractor and certified as "Work Zone Traffic Safety Supervisor" by the American Traffic Safety Service Association, ATSSA.

B. The Contractor shall be responsible for the maintenance of public streets and traffic control for the duration of the project. The cost of Traffic Control including the cost of any required off duty police officers shall be included under the appropriate bid item in the Proposal. If no bid item for this is included, said costs shall be included in other appropriate items of the bid and no extra compensation will be allowed.

1.0.2. REGULATIONS

A. As used herein, any reference to City of Opa-Locka, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over areas or streets, or their departments, published regulations, permits or data. The Contractor shall abide by all applicable laws, regulations, and codes thereof pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

1.0.3. MAINTENANCE OF TRAFFIC (M.O.T.)

A. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control, and other provisions throughout the Project as required by the City of Opa-Locka, Miami-Dade County Department of Transportation and Public Works (MDCDTPW) Traffic Division, Florida Department of Transportation (FDOT), or other governing agency. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the MDCDTPW Manual. No street shall be completely blocked, nor blocked more than one-half at any time, keeping the other one-half open for traffic, without specific approval. Hard closures require approval from the City of Opa-Locka Transportation Department

B. An off-duty City of Opa-Locka police officer is required. Off-Duty Office phone number is (305) 681-1033.

C. The Contractor shall provide all barricades with warning lights, necessary arrow boards and signs, to warn motorists of the work throughout the project. Adequate approved devices shall be erected and maintained by the Contractor to detour traffic.

D. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times.

E. The Contractor shall provide necessary access to all adjacent property during construction.

F. The Contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the MDCDTPW Manual. In addition, the Contractor shall be responsible for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, the Contractor is alerted that vehicle loop detectors may have been embedded in the pavement. Every effort has been made to show the approximate locations on the plans; however, the Contractor shall verify these locations by inspecting the site of the work and by contacting the Traffic Division. Any loop detector which is damaged by the Contractor, whether shown on the plans or not, shall be repaired or replaced by the Contractor, at his expense, and to the satisfaction of the Traffic Division.

H. The Contractor shall notify the Traffic Division twenty-four (24) hours in advance of the construction date, and forty-eight (48) hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed, and the swale or median areas restored to their previous condition.

J. Pavement markings damaged during construction shall be remarked, as required by the Traffic Division.

PART 2 – PRODUCTS

2.0.1. MAINTENANCE OF TRAFFIC PLANS

A. For construction within the City public right-of-way, the Contractor shall submit two sets of maintenance of traffic (MOT) plans for review to the City of Opa-Locka Public Works Department and the agency having jurisdiction.

B. MOT plans should be designed and developed by a certified MOT Specialist when normal traffic flow will be impacted causing unexpected or confusing situations in unclear travel path for motorist/pedestrians when entering non advanced warning work zones. MOT work zone traffic controls separate and protect workers, pedestrians and motorists delineating areas closed to traffic.

C. MOT plans must be designed in accordance with the requirements of the agency having jurisdiction.

D. MOT plans must be site-specific.

E. MOT plans will be reviewed and approved by the agency having jurisdiction.

F. MOT plans shall be in color.

PART 3 – EXECUTION

NOT USED

END OF SECTION

DIVISION 2 – SITE WORK

02210 SITE GRADING

PART – 1 GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall perform grading work within the limits, elevations and grades indicated on the plans and as specified herein.

1.0.2. RELATED WORK

A. Section 01031 “Grades, Lines and Levels”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

C. Section 02510 “Asphaltic Concrete Pavement”.

1.0.3. QUALITY CONTROL

A. The site shall be graded to the required elevations. Spot elevations are shown on the plans and the finished surfaces shall be uniformly sloped between these locations.

B. Suitable excavated material shall be used in the formation of embankments. The Contractor shall provide all additional fill material required to complete the embankments.

1.0.4. EXISTING CONDITIONS

A. Known underground, surface, and aerial utility lines and buried objects are based on best available data and indicated on the plans. Contractor shall verify all locations.

1.0.5. PROTECTION

A. Protect trees, shrubs, and lawns and other features remaining as part of final landscaping.

B. Protect bench marks, existing structures, fences, roads, sidewalks, paving, and curbs against damage from equipment and vehicular traffic.

C. Protect aerial, surface, or underground utility lines or appurtenance which are to remain.

PART 2 – PRODUCTS

2.0.1. FILL

A. Unless otherwise noted, suitable fill material shall be non-cohesive, non-plastic, granular mixture of local sand and lime rock, shall be free from vegetation, organic material or muck and shall contain not more than 8 percent material by weight which passes the No. 200 sieve. Broken concrete shall not be used in the fill. Fill material containing lime rock shall have sufficient sand to fill the voids in the lime rock, and no individual rocks or pieces of hard material that will not pass a 6-inch diameter ring shall be used in the fill; except that the upper 4-inches of all backfill or fills shall not contain any rock or hard material that will not pass a 3-inch diameter ring. All fill material shall be provided by the Contractor from any excess suitable on-site material or from off site sources, all subject to review and acceptance by the Engineer prior to use. The Contractor shall be responsible for determining the volume of material required for the site.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. Establish and identify required lines, levels, contours, and datums.

B. Maintain benchmarks, monuments, and other reference points. Re-establish if disturbed or destroyed at no cost to the City.

C. Before start of grading, establish the location and extent of utilities in the work areas. Notify utilities to remove and relocate lines which are in the way of construction.

D. Maintain, protect, reroute, or extend as required existing utilities to remain which pass through the work area.

3.0.2. REMOVAL OF TOPSOIL

A. Topsoil of horticultural value shall be stripped from areas of construction under this contract and stockpiled in area designated by Engineer. Said material shall be stockpiled separately from fill material.

B. Do not permit topsoil to be mixed with subsoil.

C. Do not strip topsoil when wet.

D. Do not drive heavy equipment over stockpiled topsoil.

3.0.3. ROUGH GRADING

A. Rough grade site to required levels, profiles, contours, and elevations ready for finish grading and surface treatment. Maintain the following:

1. Sodded areas: 4 ½-inches below finished grade elevation

2. Seeded areas: 6-inches below finished grade

3. Paved areas: 21½-inches below finished grade elevations

4. Shrub beds: 24-inches below finished grade elevations

5. Flower beds: 18-inches below finished grade elevations

6. Concrete sidewalks: 6-inches below finished grade elevations

B. Prior to placing fill material over undisturbed subsoil, scarify surface to depth of 6-inches.

3.0.4. GRADING AND COMPACTION

A. Fill material shall be placed in lifts not to exceed 8-inches and compacted to a density of not less than 95 percent of maximum density at optimum moisture as determined by ASTM D 1557. Fill material shall be within plus or minus 2 percentage points of optimum moisture content. The minimum density acceptable at any location within the pavement subgrade shall be as specified in Section 02745 "Asphaltic Concrete Pavement".

3.0.5. FINE GRADING

A. After structures, bases and pavements are completed and the yard piping trenches backfilled, the disturbed areas of the site shall be fine graded. All construction debris, regardless of size, shall be removed. The completed surface shall be shaped and sloped to drain away from the structures. The completed surface shall be within 0.1 foot of the elevations shown on the plans, unless otherwise accepted by the Engineer. Minor adjustments to line and grade may be required as the work progresses in order to satisfy field conditions.

3.0.6. SURPLUS MATERIAL

A. Remove surplus materials from site.

B. Dispose of surplus material at no cost to the City.

END OF SECTION

02220 EXCAVATION – GENERAL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work specified in this section consists of the removal of protruding objects as required to prepare the area of the proposed construction, and the removal and disposal of all product and debris which are not required to be salvaged or nor required to complete the construction.

1.0.2. RELATED WORK

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

3.0.1. REGULAR EXCAVATION

A. Regular Excavation shall include roadway excavation and borrow excavation, as defined for each.

B. Roadway Excavation shall consist of the excavation and the utilization or satisfactory disposal, of all materials necessary for the construction of the roadway, side ditches, etc., within the limits of the roadway right of way as show in the plans.

3.0.2. BORROW EXCAVATION

A. Borrow Excavation shall consist of the excavation and satisfactory utilization of material from authorized borrow pits. It shall include only material that is suitable for the construction of roadway embankments or of other work of constructing embankment covered by the contract and unsuitable material in borrow areas furnished by the City, which must be excavated as determined by the Engineer, in order to obtain the suitable material.

3.0.3. LATERAL DITCH EXCAVATION

A. Lateral ditches shall include inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right of way, as shown in the plans. Unless otherwise shown in the plans all excavation in that portion of lateral ditches beyond the limits of the roadway right of way, including the sections where dressing is required as provided in 120-11.1, shall be classified as Lateral Ditch Excavation.

3.0.4. SUBSOIL EXCAVATION

A. Where muck, rock, clay or other material within the limits of the roadway is unsuitable in its original position, the Contractor shall excavate such material to the cross sections shown in the plans or indicated by the Engineer, and shall backfill with suitable material, which shall be shaped to conform to the required cross sections. Where the removal of plastic soils below the finished earthwork grade is required, a construction tolerance from the lines shown in the plans as the removal limits, of plus or minus 0.2 foot in depth and plus or minus six inches (each side) in width will be allowed.

3.0.5. TRENCH EXCAVATION

A. General

1. Design, Provide, and maintain shoring, sheeting and bracing as necessary to support the side of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed work.

B. Trench Excavation Plan: Prepare Trench Excavation Plan addressing the following topics:

1. Details or shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions.

C. Removal of Excavation Support

1. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill.

2. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed work, or adjacent property.

D. Trenches

1. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable state and local construction safety order, and federal requirements.

3.0.6. DEWATERING SYSTEMS

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

3.0.7. STOCKPILING EXCAVATED MATERIAL

C. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed work, if weight of stockpiled material could induce excessive settlement.

H. Disposal of Spoil

3.0.8. DISPOSAL OF SURPLUS AND UNSUITABLE MATERIAL

A. Ownership of Excavated Materials

1. Owner of all suitable excavated material shall remain in the City until the final job requirements for fill or backfill materials have been fulfilled. Unless otherwise provided by the plans or special provisions, any surplus materials then remaining and not needed for job requirements shall become the property of the Contractor and are to be disposed of by him/her, outside the right of way, to the satisfaction of the Engineer.

2. In urban or other areas where temporary storage of apparent excess suitable materials within the right of way may be impracticable, the Contractor may stockpile the materials outside the right of way in areas provided by him/her. Until stock materials are needed in the job or are declared surplus. With the written approval of the Engineer, the Contractor may dispose of such apparent excess

material with the stipulation that he shall replace any portion of the disposed material required to fulfill the actual job requirements, with equally suitable material, at his own expenses.

3. No extra compensation will be allowed for any re-handling involved under the provisions of this Sub-article.

B. General Requirements for Disposal: Excavated muck or other materials unsuitable for the roadway construction shall be disposed of as shown in the plans or, if the plans do not indicate the disposal, the materials shall become the property of the Contractor and shall be disposed of by him/her outside the right of way.

C. Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.2 when approved by the Engineer, in rural undeveloped areas muck (A-8 material) may be placed on the slopes, or may be stored alongside the roadway, provided there shall be a clear distance of at least six feet between the roadway grading limits and the muck, and the muck shall be so dressed as to present a reasonably neat appearance. In addition, disposal of this material by placing on the slopes may also be permitted in developed areas where, in the opinion of the Engineer, this will result in an esthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where muck or other unsuitable material is permitted to be disposed of inside the right of way limits, such material shall not be placed such as to impede the inflow or outfall of any channel or of side ditches. The Engineer shall determine the limits adjacent to channels within which such materials shall no be placed.

D. Disposal of Paving Materials: Unless otherwise indicated in the plans, paving materials excavated in the removal of existing pavements, such as paving brick, asphalt block, concrete slab, lime-rock, sidewalk, curb and gutter, etc., shall become the property of the Contractor and shall be disposed of by him/her outside the right of way. If the materials are to remain the property of the City, they shall be placed in neat piles as directed.

E. Disposal Areas: Where the plans or specifications require the Contractor to dispose of excavated materials outside the right of way, and the disposal area is not indicated in the contract documents, the Contractor shall furnish the disposal area without additional compensation. Areas provided by the Contractor for disposal of removed paving materials shall be out of sight of the project and at least 300 feet from the nearest roadway right of way line of any State-maintained road. The 300-foot limitation will not apply, however, if the materials are buried.

1.0.10 USE OF PUBLIC STREETS

A. Ownership of use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Any earth or other excavated material spilled from trucks shall immediately be removed by the Contractor and the streets cleaned to the satisfaction of the governing authority.

B. The City has not made any attempt to define the equipment to be used in transporting the excavated material since this may vary, however, the Contractor shall abide by the following general requirements:

1. Transport vehicles must be of the type(s) approved for this application by the political jurisdictions involved. General requirements are that the vehicles have watertight bodies that they be properly equipped and fitted with seals and covers to prohibit material spillage or draining, and that they be cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within all legal weight limits and operated safely within all traffic and speed regulations.

2. Access to businesses, schools and homes along the route of the work must be provided by the Contractor at all times.

3. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over.

END OF SECTION

02230 CLEARING AND GRUBBING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Unless otherwise shown in the plans, Standard Clearing and Grubbing shall be done within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right of way ditches, etc.

2. All areas where roadway embankments will be constructed.

3. All areas where structures will be constructed, including pipe culverts and other pipelines.

4. Any other areas specifically called for on the plans to be cleared and grubbed.

1.0.2. DEFINITIONS

A. Clearing shall consist of the cutting, removal and satisfactory disposal of all trees, stumps, brush, shrubs, rubbish and any other objectional material within the designated areas.

B. Grubbing shall consist of the removal and disposal of all stumps larger than 1-1/2 inches in diameter and other objectional material to a depth of at least 12 inches below the ground surface.

1.0.3. QUALITY ASSURANCE

A. In the course of the work, it may become to remove trees if they interfere with the work. Dade County and various municipalities have ordinances regulating the removal, relocation and pruning of trees in the public right-of-way, these ordinances shall be strictly adhered to. The Contractor shall obtain a permit from Dade County and/or other regulatory agencies having jurisdiction over the work area before removing, relocating and/or pruning any tree. The Contractor shall comply with all requirements and conditions of the permit.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. CLEARING AND GRUBBING

A. The Contractor shall remove and replace, where required all existing shrubbery, trees, grass, sprinklers, fences, signs, mailboxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of all excavation necessary for the construction of the project.

B. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges. Where such cutting is for the purpose of pipeline installation, saw cutting shall be either parallel or at right angles with the centerline of the pipe.

C. To protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction, prior to proceeding with any work in the vicinity.

3.0.2. DEPTHS OF REMOVAL OF ROOTS, STUMPS AND OTHER DEBRIS

A. In all areas where excavation is to be done and where the excavated material is to be used in the construction of roadway embankment or roadway base or pavement; also in all areas where roadway embankment will be constructed; roots and other debris shall be removed to a depth of at least one foot below the ground surface. The surface shall then be plowed to a depth of at least six inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the roadway right of way shall be completely removed and disposed of by the Contractor.

B. Where excavation is done within the roadway area and where excavation for structures is done, all roots, etc., protruding trough or appearing on the surface of the completed excavation shall be removed to a depth of at least one foot below the excavation surface.

C. In borrow pits, material pits and lateral ditches, all stumps, roots, etc., protruding through or appearing on the surface of the completed exaction shall be removed or cut off below the finished excavation surface.

D. In borrow and material pits no clearing or grubbing shall be done to within three feet inside the right of way line.

E. Within all other areas where Standard Clearing and Grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be removed to a depth of one foot below the surface, but no plowing and harrowing will be required in these areas.

3.0.3. TREES TO REMAIN

A. As an exception to the above provisions, where so directed by the Engineer, desirable trees within the roadway and project site area shall be trimmed, protected and left

standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give a clear height of 16 feet above the roadway.

3.0.4. BOULDERS

A. Any boulders encountered in the roadway excavation, or found on the surface of the ground, shall be removed and placed in neat piles inside the right of way and adjacent to the right of way line.

3.0.5. SELECTIVE CLEARING AND RUBBING

A. Selective Clearing and Grubbing shall consist of removing and disposing of all vegetation, obstructions, etc., as provided above except that, where the Contractor so elects roots, etc., may be cut off flush with the ground surface. Stumps shall be completely removed and disposed of by the Contractor. Undergrowth shall be entirely removed except in specific areas designated by the Engineer to remain for aesthetic purposes. Desirable trees shall be trimmed, protected and left standing, with the exception of such trees as the Engineer may designate to be removed in order to facilitate right of way maintenance. Undesirable or damage trees (as so designated by the Engineer), shall be removed. Selective Clearing and Grubbing shall be done only in areas so designated in the plans.

3.0.6. PROTECTION OF ADJACENT AREAS

A. The Contractor shall protect areas shown on the drawings or designated by the Engineer of Record to remain protected from damage by construction operations by erecting suitable barriers of other acceptable means.

B. Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced.

3.0.7. DISPOSAL

A. All roots, vegetation and other refuse removed from the site during clearing and/or grubbing operations shall be legally disposed of by the Contractor. Where required, the Contractor shall obtain a permit from Miami-Dade County and/or other regulatory agencies having jurisdiction over the work area before burning any material on the site.

END OF SECTION

02314 EXCAVATION, BACKFILL AND FILL FOR STRUCTURAL FACILITY AND UTILITY SYSTEMS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included under this Section consists of furnishing material and equipment, and performing all labor necessary for excavating, backfilling, filling and compaction of areas to be occupied by facilities or utility systems to be constructed.

B. Plan For Excavation: Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the Engineer of Record for approval. The Contractor shall consider, and his plan for excavation shall reflect, existing utilities that are to remain, the equipment and methods to be employed in the excavation.

1.0.2. QUALITY ASSURANCE

A. All excavations shall conform with South Florida Building Codes, the State of Florida Trench Safety Act, OSHA requirements and the provisions herein. Excavations shall be executed in accordance with all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770) 48 hours prior to any excavation.

B. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami Dade County's Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

C. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required, granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements.

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D4318.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D4318.

3. Not more than 10 percent of weight shall be finer than 74-micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill.

C. Debris, broken paving, or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the City or designee. If sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL

A. Select backfill material specified herein shall meet all the general requirements for backfill material set forth in 2.01, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill material may be material resulting from trench excavation, if suitable in the opinion of the City or designee, carefully selected to comply with these requirements.

1. Trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the Engineer, at his discretion.

2. **Backfilling and compaction shall be kept up with the rate of pipe laying. Backfill consisting of the specified material shall be placed and properly compacted, to the degree specified hereinafter. Unless otherwise ordered or approved by the Engineer, in writing, no temporary fill, refill, or uncompacted fill shall be installed. Under no circumstances shall backfill material other than that specified or an approved equal be installed. Backfill shall be placed and compacted immediately after installation of piping.**

3. Where existing paving is damaged or removed, temporary paving, as specified hereinafter shall be placed the same day as the ditch backfill and compaction and

it shall be replaced with permanent paving within thirty (30) days, to the limits shown in the City's Standard Details or directed by the Engineer.

4. Backfilling and compaction of trenches will not be allowed until the work has been inspected by the Engineer, and the Engineer indicates that backfilling and compaction may proceed. Any work covered up or concealed without the knowledge or consent of the Engineer may be required to be uncovered or exposed at no cost to the City.

5. The Contractor shall backfill and compact all trenches and other excavations made in the process of installing the pipe. The cost of all backfilling and compaction shall be included in the price bid under the various Items. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes. Backfill to a point at least one (1) foot above the pipe shall be select backfill material not exceeding two (2) inches in diameter. Above this point, backfill shall be of material not exceeding six (6) inches in diameter.

6. Backfilling and compacting of material under and around the pipe and to one (1) foot above the crown shall be in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted to at least 98 percent of maximum density as determined by AASHTO Standard No T-180-74, "Moisture-Density Relations of Soils using a 10-lb. (4.54 Kg.) Rammer and an 18 in. (457 mm) Drop." The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Engineer.

7. Backfilling and compacting of material lying above a point one (1) foot above the crown of the pipe and below the pavement base or the surface of the ground if out of pavement shall be accomplished in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180-74 or such greater density as may be required by the governing authority over the area in which the work is performed.

8. A testing laboratory, designated by the City, will make periodic field tests to determine the density being obtained in each lift, or layer, of the backfill. The City will pay the cost for each test that indicates that the density obtained in the backfill meets or exceeds the specified percentage. Contractor shall pay the cost for each test that indicates that the density obtained in the backfill is insufficient and does not meet the specified percentage. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted in a manner approved by the Engineer, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results. The Contractor shall exercise proper care to ensure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the

natural water table if the "Alternate Method of Construction" is utilized. See Section 02220 “Excavation – General”.

9. Backfill and compaction shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed and compacted as soon as practical after the laying of the pipe.

10. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

11. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material at no additional cost to the City.

12. Suitable material in excess of all backfill requirements shall be removed from the work and disposed of by the Contractor. The cost for removal shall be included in the overall Project cost bid.

13. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of 1/2-inch except as otherwise directed by the Engineer. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location. The cost for replacement of gravel or rock stabilized driveways and roadways shall be included in the overall Project cost bid unless a specific Bid Item is established in the Quotation.

14. Backfill material shall consist of the suitable excavated material being stored for this purpose. Backfill material placed within one (1) foot of piping and appurtenances shall not contain any stones or rocks larger than two (2) inches in diameter, and no stones or rocks larger than 6 inches in diameter will be permitted in any backfill. Backfill material containing mangrove muck or other unsuitable materials shall not be used.

15. During the backfilling operation, care shall be taken to preserve the alignment and gradient of the installed pipe.

2.0.3. SUITABLE BACKFILL

A. Suitable backfill material shall be clean and free from all organic material, clay, marl or unstable materials, debris, lumps, broken paving, or other deleterious material. No rocks or stones larger than 3½ inches in diameter shall be allowed in any suitable backfill. Material for backfill may be material resulting from excavation, if suitable in the opinion of the City or designee.

2.0.4. STRUCTURAL FILL

A. Structural fill shall consist of an inorganic, non-plastic, granular soil containing less than 10% material passing the No. 200 mesh sieve (relatively clean sand or crushed limerock with a 2 inches max. particle size) with a Unified Soil Classification of GP, GW, SP, SPGM, SW-SM or SP-SM.

2.0.5. UNSUITABLE FILL AND BACKFILL MATERIAL

A. Unsuitable fill and unsuitable backfill material shall be all material not meeting the definition of Structural Fill, Suitable Backfill, or Select Fill and cannot be amended or blended in the field to meet the standard of one of these fills. Unsuitable Fill material may contain deleterious material including but are not limited to: cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material, organic matter, muck, loose sand, loose free shells, corals or skeletal remain of other marine invertebrates retained on the No. 4 sieve, or water sensitive clay minerals.

2.0.6. BEDDING MATERIAL

A. Bedding may be select backfill material, as specified above, if approved by the City or designee.

B. No. 57 stone may be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details.

C. Sand for bedding shall be dry screened. Sand shall be graded sand with 100% passing a ⅜ inch sieve and not more than 5% passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approved by the City or designee. Existing pipe bedding material may not be used.

2.0.7. NO 57. STONE

G. No 57 stone shall be crushed stone (or drain field limerock). Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines, and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4- inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10

No. 8	0 to 5

2.0.8. BALLAST ROCK

A. Ballast rock shall be composed of hard, durable, sound pieces having a specific gravity of not less than 2.65. It shall be crushed rock conforming to the following gradation:

Sieve size	Percent Finer by Weight
1-½ inch	100
¾ inch	30 to 75
½ inch	15 to 55
¼ inch	0 to 5
No. 8	0 to 5

2.0.9. STEEL – SHEET PILING

A. Steel sheet piling shall conform to the requirements of ASTM A572 "High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality," (AASHTO No. M223) or ASTM A328 "Steel Sheet Piling."

B. The Contractor will be responsible for design and selection. Structural plans for the sheet steel piling installation and the calculations for the required Section Modulus and the Sheet Piling Designation shall be prepared by a registered professional engineer licensed to practice in the State of Florida. Sealed plans shall be submitted to the Engineer for approval prior to installation of the piling system.

C. Structural steel shall meet the requirements of ASTM A36 "Structural Steel."

D. Whenever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures. Shoring system adequately anchored and braced to resist earth on which the support or stability of existing structures is dependent must be left in place at completion of work. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. The Contractor shall remove and replace, where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, guard rails, structures, roadways, sidewalks, curbs and similar items or structures in the way of the main and shall make all excavation necessary for the construction of the main, to the lines and grades shown on the Plans. Weeded areas shall be restored as specified in Section 02900 “Landscaping”, Care of Trees, Shrubs and Grass. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the gravity main. Unless specific bid items are provided in the Quotation form, the cost of removing and replacing any plantings or existing structures shall be included in the

price bid. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Engineer.

B. Clearing: The construction site shall be cleared of all obstructions and vegetation, including large roots and undergrowth, within 5 feet of the lines of excavation, in accordance with Section 02230 "Clearing and Grubbing". All debris created by this clearing operation shall be hauled from the site and disposed of by the Contractor.

1. All cleared materials shall be promptly removed from the work area and disposed of in an area provided by the Contractor, at no additional cost to the City. Accumulation of debris or stockpiling along the route of the work will not be allowed.

C. Removals: Complete all removals within the lines of excavation prior to beginning excavation. Where required, all existing shrubbery, trees, grass, sprinklers, fences signs, mailboxes, structures, sidewalks, curbs, utility poles, or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depths shown on the approved plans, but in all cases as required for construction, and as specified herein. All excavations shall be made by open cut. All existing utilities such as pipes, poles, and structures shall be carefully located, supported, and protected from injury; in case of damage, they shall be restored at the Contractor's expense.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. For structures, the Contractor shall maintain the bottom of the excavation firm and dry and maintain an elevation of the water one (1) foot below the concrete to be placed, by use of pumps, tremie or other acceptable method.

D. Pipe trench excavation shall be in accordance with the appropriate Standard Detail in the Miami-Dade County Public Works Manual

E. The Contractor shall excavate pipe trenches to a minimum of 6 inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

F. Not more than 100 feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Engineer.

G. If, in the opinion of the Engineer, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required. The cost of this extra excavation, and backfilling with select backfill material, shall be included in the price for pipe laying and no additional payment will be made for this work.

H. If the soil is still unsuitable after the additional excavation as prescribed above, and the Engineer authorizes "Overcut," the trench bottom shall be excavated further in one (1) foot increments and paid for as "Trench Overcut." See below 3.0.6. "Trench Overcut.

I. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12 inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6 inch clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

   For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

J. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable Local, State, and Federal requirements.

K. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material.

L. In areas where trench widths are not limited by site constraints the trench sides may be sloped to a stable angle of repose of the excavated material but only from a point one foot above the crown of the pipe. A substantially and safely constructed movable shield, "box" or "mule" may be used in place of sheeting when the trench is opened

immediately ahead of the shield and closed immediately behind the shield as pipe laying proceeds inside the shield.

M. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

N. Excavated material shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

O. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Suitable material in excess of backfill requirements shall be used on the site as directed by the City or designee, or removed at the Contractor's expense. Any pockets of organic matter, concrete or other unsuitable material encountered in excavating shall be removed and replaced with material satisfactory to the City.

P. The excavation of walls for forms will not be permitted.

Q. The trench wall shall be kept at a stable angle of repose to maintain trench widths within the limits hereinafter specified or shown on the Plans.

R. The trench, when in rock, shall be excavated to a width within the limits of the top of the pipe and the trench bottom so as to provide a clearance on each side of the pipe barrel, measured to the face of the excavation, of 12 inches. Rock or removal in the excavation shall be considered a part of the excavation and as such no additional payment shall be made therefore. Where excavation is in silt, the width of trench bottom shall be pipe O.D. plus two (2) feet with the trench walls being kept at a stable angle of repose. All pipe trenches shall be excavated to a level at least 12 inches below the outside bottom of the proposed pipe barrel.

S. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

T. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

U. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting when the trench is opened immediately behind the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe and backfilling and compaction.

V. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Plans, or as directed by the Engineer. All excavations shall be made by open cut. Any existing utilities such as pipes, cables, etc., shall be carefully supported and protected from damage, and in case of damage, they shall be restored at no cost to the City.

W. Excavation for other piping and appurtenances shall be sufficient to leave at least 12 inches clear between their outer surfaces and the embankment or sheeting that may be used to protect them.

X. Provide excavation support as necessary to support sides of excavations and prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work.

Y. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed Work, or adjacent property.

Z. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks and they shall not be placed on private property. In congested areas, such materials as cannot be stored adjacent to the trench or used immediately as backfill shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, in the opinion of the Engineer, it shall be removed immediately by the Contractor to a storage area.

AA. The Contractor shall temporarily store excavated material suitable for backfill in full compliance with the provisions of the permits. All mud, silt, debris and other material unsuitable for backfilling the trench shall be removed and legally disposed of offsite by the Contractor. The Contractor shall make his own arrangements regarding stock piling of excavated suitable material and storage and assembly space to properly and safely carry out the construction. Any agreements entered into by the Contractor and property owners shall hold the City harmless. Storage of excavated material shall not cause environmental problems and shall be performed at no additional cost to the City.

BB. Excavation for structures:

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the depths and dimensions shown on the plans, but in all cases as necessary for satisfactory installation.

2. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall, in general, be either parallel or at right angles.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists

prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

4. Where interlocking steel sheeting is used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below the level be left in place.

5. Excavation for manholes and other piping appurtenances shall be sufficient to leave at least two (2) feet clear between their outer surfaces and the embankment or sheeting.

6. If, in the opinion of the Engineer of Record or the City, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the City that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired.

8. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

9. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

3.0.3. TRENCH STABILIZATION

A. No claim for extras or additional payment will be considered for cost incurred in the stabilization of trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, or other causes. In no event shall pipe be installed when such conditions exist and the Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation at no additional cost to the City.

3.0.4. SHEETING AND SHORING

A. Contractor shall be solely responsible for the design, installation, and maintenance of shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work. Design of shoring or other excavation support shall be provided by a Professional Engineer licensed in the State of Florida. Prior to trench excavation, a Trench Excavation Plan shall be prepared and shall address the following topics.

1. Details of shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions

B. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

C. For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

D. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

E. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut of at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

F. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

G. In areas where trench widths are not limited by right-of-way and/or easement widths, property line restrictions, existing adjacent improvements, including pavements, structures and other utilities, and maintenance of traffic, the trench sides may be

sloped to a suitable angle of repose of the excavated material, but only from a point one (1) foot above the crown of the pipe.

3.0.5. MOVABLE SHIELD (MULE)

A. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting except where it is specifically called out on the Plans or in the Specifications to install sheeting. When using a shield, the trench is opened immediately ahead of the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe, and backfilling and compaction. When a moveable shield or box is used, the installed pipe shall be secured to prevent it from moving when the box is moved.

3.0.6. TRENCH OVERCUT

A. Trench overcut provisions herein shall be used only under direct authorization by the Engineer.

B. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, and the Engineer authorizes overcut, the pipe trench shall be excavated further in one (1) foot increments until either a suitable foundation material is found, or the Contractor is directed by the Engineer to stop trench overcut operation and begin backfilling. In no case will trench overcut be more than 6 feet in depth, i.e., to a point 8 feet 6 inches below the bottom of the pipe.

C. Selected backfill, as defined in 2.0.1. “Materials” shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.7. DEWATERING

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

C. As per the Class V permit requirements to be secured by the Contractor, he/she is responsible for the transportation to, and safe disposal of, potentially contaminated groundwater as a result of the dewatering efforts. The safe disposal shall be made in accordance with local, State, and Federal regulations.

3.0.8. TRENCH RESTORATION

A. Trench restoration shall be per the applicable of Miami-Dade County Standard Details.

B. Mill and resurface minimum 1 inch in accordance with the restoration limits in Part 1 or as directed by the City of Opa-Locka Public Works Department. Prior to placing pavement, City Public Works inspection is required. If milled section crosses a pedestrian path or temporary pedestrian path/detour, an asphalt apron must be provided at transitions with all adjacent surfaces within the pedestrian crossing.

C. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½ inch, except as otherwise directed by the City or designee. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

3.0.9. TEMPORARY PAVEMENT

A. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City or designee, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with This excavation Work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City of Opa-Locka Public Works Department to allow lengths greater than 1,200 feet. At the sole discretion of the City of Opa-Locka Public Works Department, the allowable limits in the permit may be reduced due to unforeseen right-of-way conditions.

C. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City or designee until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all Work shall be completed in sections compatible with specified traffic maintenance procedures.

D. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed

over properly compacted limerock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of paving restoration.

E. Sand seal on the limerock base course will not be permitted in lieu of temporary paving.

F. Unless otherwise approved by the City or designee, temporary paving shall be placed within twenty-four (24) hours following the completion of backfilling.

G. If temporary asphalt is utilized, it shall be removed prior to placement of final asphalt surface.

H. Temporary restoration requires field approval by City of Opa-Locka Public Works Department Field Inspector

3.0.10. STOCKPILED MATERIALS

A. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

B. Material suitable for backfill and not needed for backfill at the structure shall be stockpiled and later moved where needed.

C. Materials shall be stored and in such a manner that will not interfere unduly with City operations, traffic at the site, traffic on public roadways, or sidewalks and shall not be placed on private property. In congested areas, such materials that cannot be stored adjacent to the trench or used immediately as backfill shall be removed to other convenient places of storage acceptable to the City or designee at the Contractor's expense.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved Work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed Work if weight of stockpiled material could induce excessive settlement.

H. Do not place stockpiles within 50 feet of inlets, streams, wetlands, bodies of water, etc. unless permitted by the City or designee.

I. Stockpile side slopes shall be no steeper than 3 horizontal : 1 vertical unless approved by the City or designee. Top of stockpile shall have a minimum slope of no less than 5% to promote positive drainage.

J. Provide perimeter erosion control measures around stockpiles, located no closer than 5- feet from toe of slope, and stabilized stockpile surface with temporary seeding or other measures if stockpile will remain inactive for more than seven (7) days.

3.0.11. BACKFILL

A. Place and compact granular bedding and fill over pipelines and conduits. Density tests for determination of the specified compaction shall be made by a testing laboratory approved by the City or designee. Testing of compacted fill materials is required in accordance with these Specifications. If results of tests taken during the progress of the Work indicate compacted materials do not meet specified requirements, such defective Work will be removed, replaced, and re-tested as directed by the City or designee and at the Contractor's sole expense. Compacted fill is to be tested before proceeding with the placement of surface materials.

B. Backfilling of pipe trenches will not be allowed until the Work has been approved by the City or designee, pressure tested if required, and the City or designee indicates that backfilling may proceed. Any Work which is covered or concealed without the knowledge and consent of the City or designee shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the City or designee.

C. The Contractor shall backfill all trenches and other excavations made in the process of installing the culvert. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes.

D. The Contractor shall maintain trenches free of debris, wood, rocks over 2 inches in diameter, and water.

E. Backfill shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after laying the pipe. On parts of the line where the groundwater level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

F. Pipe bedding and backfill shall be in accordance with the applicable Miami-Dade County Standard Details. Material shall be placed in maximum 6-inch layers. Each layer shall be thoroughly compacted to at least 98% of maximum density as defined by AASHTO Specifications T-180. The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results meet the requirements and are approved by the City or designee. Care shall be taken to preserve the alignment and gradient of the installed pipes.

G. A testing laboratory will make periodic field tests to determine the density being obtained in each lift of backfill. Testing shall be performed at a minimum frequency of one test every 10 feet. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting, and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

H. The Contractor shall exercise proper care to ensure no pipe will be broken or displaced by use of mechanical compacting equipment. Water shall be added as required to obtain optimum moisture content to facilitate compaction but ponding or inundation of backfill will not be permitted.

I. In the event sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

3.0.12. ALTERNATE METHOD OF CONSTRUCTION

A. A combination of conditions in the substrata, water table, method of disposal or regulatory agency requirements may be encountered during the course of the work which makes dewatering impossible, or possible only through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor may request permission to employ the following Alternate Method of Construction. The concurrence of the Engineer shall be obtained in writing and shall limit the use of the Alternate Method of Construction to such specific portions of the work as the Engineer shall determine.

B. The requirements set forth in other Sections of these Specifications shall establish the required standards of construction quality for this work. Use of the Alternate Method of Construction described hereinafter shall in no way be construed as relieving the Contractor of his basic responsibility for satisfactory completion of the work.

C. Under no conditions will any additional or increased payments be made to the Contractor for excavation, backfill, sheeting or any cost incurred for work or materials, or any other costs incurred as a result of the use of this alternate method of construction. The unit prices established in the Quotation shall be full payment for the various items of work.

D. Subject to all of the requirements stated herein, including written approval of the Engineer, construction will be permitted in accordance with the following specifications. All requirements of these Specifications shall apply to this construction unless otherwise specifically modified herein.

1. Removal of Water: The installation of pipe and appurtenances under water will be permitted and the dry-trench requirements of Section 6.06 "Removal of Water" will be waived.

2. Excavation: Excavation shall be performed in accordance with 3.0.2. "Excavation."

3. Pipe Bedding:

   a. Pipe bedding shall be placed from 6 inches below the outside bottom of the proposed pipe barrel up to the level of the lower one-third of the pipe barrel for pressure mains.

   b. The bedding material shall be pea rock, or drainfield limerock. Limerock screenings, sand or other fine organic material shall not be used.

   c. The bedding material shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fittings.

4. Backfill:

   b. After the pipe is installed, backfilling shall proceed in accordance with the provisions of 2.0.1. “Materials”

   c. Select backfill material shall be used to backfill around the pipe and to a level one (1) foot above the crown of the pipe.

   d. Under no circumstances will material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

E. If the Alternate Method of Construction is used, all backfill material, including specified pipe bedding material, shall be carefully lifted into the trench and not released to fall freely therein until the bucket or container is at or just above water level. Under no circumstances will backfill material be dumped or pushed into trenches containing water. Below existing water level, and to a point not more than 18 inches above the water level the backfill material shall be carefully placed in uniform layers, of equal depth on each side of the pipe. From a point not more than 18 inches above the water level, and below the pavement base or the surface of the ground, if out of paved areas, backfill material shall be placed and compacted for normal backfilling as provided in 2.0.1. “Materials” for compacted backfill.

END OF SECTION

02315 TRENCHING AND BACKFILLING FOR PIPING SYSTEMS

PART 1 – GENERAL

1.0.1. WORK INCLUDED

A. The work included under this Section consists of excavating, backfilling and compaction as required for the construction of the piping systems as specified herein. (See Section 02314 for excavation for structures.)

B. All excavations shall be executed in accordance with the South Florida Building Codes, the State of Florida Trench Safety Act (TSA), OSHA requirements and all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770), 48 hours prior to any excavation.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required (See Section 02745), granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements:

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D 423.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D 424.

3. Not more than 10 percent of weight shall be finer than 74 micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill. Backfill material placed to a point at least one foot (1 ft.) above pipe and appurtenances shall be select backfill material not exceeding 2-inches in diameter. For PVC gravity sewers backfill material placed at least two feet (2 ft.) above pipe shall be select backfill material not exceeding 2-inches in diameter. In any case, above this point, but up to the upper 6-inches of the trench, backfill shall be of material not exceeding 6-inches in diameter.

C. Debris, broken paving or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the Department. If

sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL MATERIAL

Select backfill material specified in these specifications or required by the Plans shall meet all the general requirements for backfill material set forth above, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill for copper tubing shall be limerock screenings or sand. Select backfill material may be material resulting from excavation, if suitable in the opinion of the Department, carefully selected to comply with these requirements.

2.0.3. BEDDING MATERIAL

Pipe bedding material shall consist of one of the following types of material, and accordance with the Department's Standard Details: (See Section UC-300 for Gravity Sewer Piping Foundations)

A. Bedding may be select backfill material, as specified above, if approved by the Department.

B. Crushed stone (or drainfield limerock) shall be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details. Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4-inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10
No. 8	0 to 5

C. Sand for bedding copper pipe shall be a dry screened sand. Sand shall be graded sand with 100 percent passing a 3/8-inch sieve and not more than 5 percent passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approve by the Department. Existing pipe bedding material may not be used.

2.0.4. BACKFILL UNDER MANHOLES AND METER VAULTS

Any excavation below the levels required for the proper construction of manholes or meter vaults shall be filled with Class C concrete. The use of earth, rock, sand or other materials for this purpose will not be permitted. (See Section 02314 for excavation for structures.)

PART 3 – EXECUTION

3.0.1. CLEARING

A. The Contractor shall perform all clearing necessary for the proper installation of all piping and appurtenances in the locations shown in the Drawings, in accordance with Section 02230, "Clearing and Grubbing".

B. Where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, structures, sidewalks, curbs, utility poles or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Drawings. All excavations shall be made by open cut.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material, but only from a point one foot above the crown of the pipe.

D. A substantially and safely constructed moveable shield or box, as approved by the Engineer of Record, may be used in place of sheeting, except where specifically called for on the Plans to install sheeting. Where a moveable shield or trench box, is used in place of sheeting and shoring, the trench shall be opened immediately ahead of the shield as pipe laying proceeds inside the shield.

E. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

F. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

G. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Material unsuitable for use in backfill shall be removed promptly and disposed of by the Contractor

H. Excavation for Pipes and Piping Appurtenances (See Section UC-300 for additional requirements for gravity sewer piping):

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the lines and grades shown on the Plans.

2. Where pavements or sidewalks are cut they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the pipe.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Department.
4.
5. Excavate pipe trenches to a minimum of 6-inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

6. If, in the opinion of the Department, the soil at that depth is unsatisfactory as foundation material because it contains unsuitable marl, muck, organic matter, or other unsuitable material, the excavation shall be continued 2 feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. If the soil is still unsuitable after the additional excavation as prescribed above, the trench bottom shall be excavated further in one foot increments in accordance with "Trench Overcut", below.

8. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

9. Where wood sheeting or certain designs of steel sheeting are used, the Department may require the sheeting to be cut off at a level 2-feet above the top of the installed pipe and that portion below that level shall be left in place.

10. If interlocking steel sheeting is used, the Department may permit its complete removal in lieu of cut-off, providing removal can be accomplished without disturbing the bedding, pipe or alignment of the pipe. Any damage to the pipe bedding, pipe or alignment of the constructed utility caused by removal of sheeting shall be cause for rejection of the affected portion of the work. Not more than 100-feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Department.

11. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

12. Excavation for appurtenances, such as manholes and valves, shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation or sheeting, if used, of not less than 12-inches. Manhole excavations shall be carried to sufficient depth to permit their construction on the undisturbed bottom of the excavation.

13. Excavation for thrust block shall be made in such a manner so that, when concrete is placed, it will bear against a firm, undisturbed, vertical trench wall with bearing are in accordance with the schedule shown in the Standard Details.

14. Selected backfill shall then be placed and compacted in 6-inch layers up to the level of the pipe bedding material.

15. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the Department that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired. The decision of the Department in this regard shall be final.

16. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

17. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

I. <u>Excavation for PVC Gravity Sewers and Service Laterals:</u>

1. The Contractor shall make all excavations necessary for the construction of the gravity sewers and service laterals to the lines and grades shown on the Plans, and in accordance with the Standard Details.

2. In stable soils, trench widths when measured to a point 12 inches above the top of the pipe shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench widths under the same conditions shall be 6-inches on each side for the pipe for 4-inch and 6- inch pipe, and 9-inches on each side of the pipe for 8-inch pipe and larger. Minimum trench widths are required to provide room for a man to place and compact the haunching and initial backfill material. Embedment material shall be Class I. (See Section UC-300)

3. In unstable soils (defined as peat, much or other organic soils, elastic silts and clays below the water table, and fine sands below the water level), trench widths when measured at a point 12-inches above the top of the pipe shall be a minimum of five (5) nominal pipe diameter in width. Slightly greater width are at the Contractor's option in order to accommodate his trenching equipment, but the pipe bedding material shall extend to the face of the excavation, or sheeting if used. Embedment material shall be Class II. (See Section UC-300)

3.0.3. TRENCH STABILIZATION

Trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes, shall be stabilized. In no event shall pipe be installed when such conditions exist. The Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation.

3.0.4. TRENCH OVERCUT

A. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the pipe trench shall be excavated further in one-foot depth increments until a suitable foundation material is found. As a point of reference, it has been the Department's experience that, typically, trench overcut does not extend to depths more than 6 feet. However, the Department reserves the right to require trench overcut to depths up to 6 feet, i.e., to a point 8.5 feet below the bottom of the pipe.

B. Select backfill, as defined above, shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.5. REMOVAL OF WATER

A. It is a basic requirement of these Specifications that excavation shall be free from water before pipe or structures are installed. However, it is realized that in certain sections

of the work this cannot be accomplished economically and the Contractor may request permission to use the "Alternate Method of Construction" defined below.

B. The Contractor shall provide all necessary pumps, underdrains, well point systems, and other means for removing water from trenches and other parts of the work including structures. The Contractor shall continue dewatering operations until the backfill has progressed to a sufficient height over the pipe to prevent flotation or movement of the pipe in the trench, so that the backfill is above the natural water level.

C. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-away or into any existing drainage structure or facility.

D. Water from the trenches and excavation shall be disposed of in such a manner as will not cause injury to public health, to public or private property, to the work completed or in progress, to the surface of the streets, or to cause interference with the use of the same by public. Submit the proposed method of handling and disposal of trench waster for approval before starting the excavation.

E. The Contractor is cautioned that Dade County or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting, or limiting, the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. Obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way, or into any existing drainage structure or facility.

F. Pumps and engines for dewatering systems shall be operated with mufflers and a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

3.0.6. INSTALLATION OF BACKFILL

A. Backfilling of pipe trenches will not be allowed until the work has been approved by the Department, pressure tested if required, and the Department indicates that backfilling may proceed. Any work which is covered or concealed without the knowledge and consent of the Department shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the Department.

B. The Contractor shall backfill all trenches and other excavations made in the process of installing the pipe. He shall maintain the surface of the backfill free from major irregularities and potholes.

C. Select backfill material shall be placed under and around the pipe to one foot above the crown (or to two feet above crown for PVC gravity sewers) in 6-inch layers. Each

layer shall be thoroughly compacted to at least 90 percent of maximum density as defined by AASHTO Standard No. T-180, "Moisture-Density Relations of Soils using a 10-lb. (4.54 kg.) Rammer and an 18-in. (457 mm) Drop". The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Department. Particular attention and care shall be exercised in obtaining thorough support for the branch of all service connection fittings. Care shall be taken to preserve the alignment and gradient of the installed pipe.

D. Backfilling and compacting of material lying above a point one foot (or two feet for PVC pipe), above the crown of the pipe and below the pavement base or the surface of the ground, if out of pavement, shall be accomplished in layers not exceeding 9 inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180 or such greater density as may be required by the governing authority over the area in which the work is performed. A testing laboratory will make periodic field tests to determine the density being obtained in each lift, or layer, or the backfill. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

E. The Contractor shall exercise proper care to insure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the natural water table if the "Alternate Method of Construction" is utilized.

F. Backfill shall in general be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after the laying of the pipe. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

G. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

H. Suitable material in excess of all backfill requirements and all unsuitable material shall be removed from the work and disposed of by the Contractor.

I. Within paved areas of trench excavation, the base and surfacing shall be reconstructed as specified under Section 02745, "Pavement Removal and Replacement".

J. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½-inch, except as otherwise directed by the Department. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

K. Backfill for Structures: See Section 02314.

3.0.7. COMPACTION AND DENSITIES

A. Methods of control and testing of backfill construction to be employed in this work are:

1. Maximum density of the material in trenches shall be determined by AASHTO Designation T 180.

2. Field density of the backfill material in place shall be determined by AASHTO Designation T 238.

B. Laboratory and field density tests are necessary to establish compliance with the compaction requirements of these specifications. The Department will not accept projects for which successful laboratory and field density test results are submitted. Tests will be made at depths and locations to the satisfaction of the Department.

C. Trench backfill which does not comply with the specified densities, as indicated by such tests, shall be reworked and recompacted until the required compaction is secured.

3.0.8. ALTERNATE METHOD OF CONSTRUCTION

A. General:

1. A combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work which make dewatering impossible, or only possible through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor, with the concurrence of the Department may elect to employ the following alternate method of construction. The concurrence of the Department shall be obtained and the Contractor shall limit the use of the alternate method of construction to such specific portions of the work as determined applicable.

2. The requirements set forth in other sections of these Specifications shall establish the required standards of construction quality for this work. Use of the alternate method of construction described hereinafter shall in no way be construed as

relieving the Contractor of his basic responsibility for satisfactory completion of the work.

3. Subject to all of the requirements stated hereinabove, including approval by the Department, construction will be permitted in accordance with the following specifications.

B. Removal of Water: The installation of pipe, manholes and appurtenances under water will be permitted and the dry-trench requirements of "Removal of Water" will be waived.

C. Excavation: Excavation shall be performed in accordance with normal applicable excavation specifications.

D. Pipe Bedding for Ductile Iron and Vitrified Clay Pipe:

1. Pipe bedding shall be placed from 6-inches below the outside bottom of the proposed pipe barrel up to the level of the springline of the pipe barrel of gravity sewers and to the level of the lower one-third of the pipe barrel for force mains or water mains. The bedding material shall be washrock, drainfield limerock or approved material. Limerock screenings, sand or other fine organic material shall not be used.

2. The bedding material used shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting.

E. Bedding for PVC Pipe: The pipe bedding, haunching and initial backfill material shall conform to embedment material listed in Section UC-300 for either stable or unstable soil conditions as required, and shall be placed and compacted in as stated in "Installation of Pipe Bedding", above.

F. Backfill:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill around the pipe and to a level one foot above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all backfill material, shall be carefully lifted into the trench and released to fall freely therein when the bucket or container is near or at a moderate height above water level. Height of release shall be to the satisfaction of the Department. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the

pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities".

G. Backfill for PVC Gravity Sewers:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill to a level two feet above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all embedment and backfill material, shall be carefully lifted into the trench and released to fall freely therein until the bucket or container is at or just above water level. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities

3.0.9. RESTORATION OF EXISTING SURFACES

Paved and grassed areas disturbed by the operations required under this Section shall be restored as indicated on the approved Plans and/or specified herein.

END OF SECTION

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct riprap composed of sand-cement or rubble (consisting of broken stone or broken concrete) as shown in the Standard Plans and in the Plans.

PART 2 – PRODUCTS

3.0.10. FILTER FABRIC

A. Use products listed on the FDOT's APL.

B. Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the City.

C. Place the filter fabric (fabric) at locations as shown in the Plans, in accordance with the manufacturer's directions. Place the fabric on areas with a uniform slope that are reasonably smooth, free from mounds, windrows, and any debris or projections which might damage the fabric.

D. Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers. Repair in accordance with the manufacturer's instructions.

E. The Contractor may sew the seams to reduce overlaps as specified in 985-3. Follow the manufacturer's instructions for all seams and overlaps.

3.0.11. PREPACKAGED SAND-CEMENT BAGS

A. Evenly proportioned sand and cement in the ratio of five cubic feet of sand to 94 pounds of cement. Material proportioned by mass shall use a sand density of 85 pounds per cubic foot.

B. Sealed package of 80 pounds of sand-cement in a bag.

C. Bag made of scrim-reinforced paper capable of holding the sand-cement without leakage.

D. Sand meets requirements of Section 902-3.3

E. Type I/II cement meets requirements of Section 921.

F. Prepackaged Sand-Cement Bags shall be one of the products listed on the FDOT's Approved Product List. Manufacturers seeking evaluation of their product shall submit

an application in accordance with Section 6. Include with the submittal a product data sheet, safety data sheet, product label, and a self-certified statement the product meets the requirements of this Section.

3.0.12. RUBBLE

A. Rubble (Bank and Shore Protection):

1. Provide sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone with a bulk specific gravity of at least 2.20. Ensure that stones are rough and angular.

2. For this application, use broken stone meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
670	290	60	2.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 85% of the material by weight is greater than Weight Minimum pounds.			

B. Rubble (Ditch Lining):

1. Use sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone or broken concrete with a bulk specific gravity of at least 1.90. Ensure that stones or broken concrete are rough and angular.

2. Use broken stone or broken concrete meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
75	30	4	1.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 90% of the material by weight is greater than Weight Minimum pounds.			

C. Physical Requirements of Broken Stone and Broken Concrete:

1. Use broken stone and broken concrete meeting the following physical requirements:

Absorption (FM 1-T 85)	Maximum 5%
Los Angeles Abrasion (ASTM C535)	Maximum loss 45%*
Soundness (Sodium Sulphate) (AASHTO T 104)	Maximum loss 12%** (after five cycles)
Flat and elongated pieces	Materials with least dimension less than one third of greatest dimension not exceeding 10% by weight.
Dirt and Fines	Materials less than 1/2 inch in maximum dimension accumulated from interledge layers, blasting or handling operations not exceeding 5% by weight.
Drop Test***(EM 1110-2-2302)	No new cracks developed, or no existing crack widened additional 0.1 inch, or final largest dimension greater than or equal to 90% original largest dimension of dropped piece.

* Ensure that granite does not have a loss greater than 55% and that broken concrete does not have a loss greater than 45%.

** The Engineer may accept rubble exceeding the soundness loss limitation if performance history shows that the material will be acceptable for the intended use. The Engineer will waive the soundness specification for rubble riprap (broken stone) when project documents indicate it will be placed in or adjacent to water or soil with a sulfate content less than 150 parts per million and a pH greater than 5.0. Soundness is not required for broken concrete.

*** The Engineer will waive the Drop Test unless required to ensure structural integrity. Provide all equipment, labor and testing at no expense to the City. EM refers to the US Army Corps of Engineer's Specification Engineering Method.

PART 3 – EXECUTION

3.0.1. GEOTEXTILE FABRIC

A. Overlap adjacent strips of fabric a minimum of 24 inches, and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.

B. Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.

C. Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.

D. Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

3.0.2 SAND-CEMENT BAGS

A. Place the bags with their ends all in the same direction. Lay the bags with broken joints, in a regular pattern. Ram or pack the bags against each other so as to form a

close and molded contact. Remove and replace bags ripped or torn in placing with sound, unbroken bags. Then, thoroughly saturate all bags with water.

B. Immediately after watering, fill all openings between bags with dry grout composed of one-part Portland cement and five parts sand.

C. Use sand-cement bags for the toe walls if required. Fill the entire trench excavated for the toe walls with sand-cement bags.

3.0.3. RUBBLE

A. Dump rubble in place forming a compact layer conforming to the neat lines and thickness specified in the Plans. Ensure that rubble does not segregate so that smaller pieces evenly fill the voids between the larger pieces.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.3. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.4. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami-Dade County Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.5. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance

with the requirements of the agencies having jurisdiction including but not limited to City of Opa-Locka, and Miami-Dade County.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.10. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.11. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being

compacted. Wetting and drying operations shall involve manipulation of the entire width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts

shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. 310-9.2 Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and

objectionable matter. If deemed necessary, the base shall be lightly sprinkled with water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is

completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the

edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays

experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

H. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

I. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

J. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

K. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

L. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

M. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material

must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

N. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

02505 CLEANING AND TESTING OF MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall clean and test the water main and sewage force main pipe, fittings and valves in accordance with these Specifications and to the satisfaction of the City.

B. The Contractor shall furnish all material, labor and equipment necessary to clean and test the water main and sewage force main pipe, fittings and valves.

C. Pipelines for Potable Water Mains shall be pressure tested for two (2) hours at 100 psi minimum test pressure in accordance with ANSI/AWWA C600 latest revision. No more than 5 psi drop over the duration of the test.

D. Pipelines for Sewage Force mains shall be pressure tested in accordance with AWWA Standard C-600, latest revision and the provisions of the City of Opa-Locka Public Works Manual. The minimum pressure for testing shall be two (2) hours at 100 psi.

E. The Contractor is advised that he is solely responsible for any damage caused to the main or it's lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

F. Potable water mains shall be disinfected and approved for use by the Health Department prior to placing the main in operation.

1.0.2. RELATED SECTION

A. Section 15995 “Disinfection of Water Main”.

1.0.3. QUALITY ASSURANCE

A. Testing shall be in accordance with ANSI/AWWA Standard C-600, latest edition, as modified herein.

B. Cleaning and testing shall be performed in strict accordance with these specifications.

C. The Contractor is cautioned that the City or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting or limiting the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. The Contractor shall comply with all regulations of all governing agencies.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. GENERAL

A. As soon as the installation of each run of main is completed, including valves sufficient for control and anchored sufficiently to withstand any test pressure, the run shall be thoroughly flushed and pigged to remove all foreign matter from pipe in accordance with AWWA C651. The Contractor shall provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent property. Note that in some circumstances it may be necessary to install valves after the line segment has been pigged. In such in instance, permission to use this sequence of operations must be approved in writing by the City.

B. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections.

C. Flush pipe through flushing branches and remove branches after flushing is completed.

D. Operate new valves during flushing process at least twice during each flush.

E. The Contractor shall clean the inside of the main in intervals during its installation. The Contractor shall utilize pigging to clean the main unless otherwise specified herein or instructed by the City. A Bare Swab No. 5, density 1 lb./ft.3 by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal, shall be utilized for this work. Any damage to the pipe lining caused by pigging shall be repaired or replaced to the satisfaction of the City at the Contractor's sole expense. The Contractor shall furnish all materials and equipment necessary to clean the mains.

F. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

G. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City.

H. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

I. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet. Where a segment is being tested which includes more than one line valve to line valve section the maximum allowable leakage, defined below, shall be based on the length of the small segment being tested. All offset connections, fire hydrants, fire hydrant branch mains, and services between line valves shall be tested with the water main.

3.0.2. WATER FOR CLEANING AND TESTING

A. Water for cleaning and testing shall be furnished as specified in "Water Used in Construction" of Section 01100 "Special Project Requirements". The Contractor shall

furnish and install all necessary pumps, piping and fittings, including the corporation stop(s), to connect the section under test to the source of water. The test pump shall be a centrifugal or gear pump producing a steady pressure free of pulsation. If a construction meter is not furnished by the City, a meter or container, calibrated to the satisfaction of the City shall be provided by the Contractor. A Contractor-supplied meter or container must be approved in writing by the City. The test pressure shall be 100 psi and, as specified in AWWA C600, Section 5.2 "Hydrostatic Testing", shall not vary more than ± 5 psi for the duration of the testing.

3.0.3. CLEANING

A. Unless otherwise approved by the Engineer, ductile iron pipe water mains and sewage force mains shall be cleaned at intervals not to exceed 30 lengths of pipe.

B. Unless otherwise ordered by the Engineer, cleaning shall be by pigging for lines of 36-inch nominal diameter and below. Lines of larger size are anticipated as being cleaned directly by construction personnel as the installation progresses. For all lines of nominal diameter greater than 24-inches the Contractor shall furnish for approval by the City a written shop drawing and procedure submittal detailing materials and methods to be used in the cleaning operation. This submittal shall be made in timely fashion so as not to delay construction and to permit sufficient time for review. If said submission is not approved, the Contractor shall immediately make such changes as are directed by the City and resubmit.

C. Prior to cleaning operations, the Contractor shall in writing, notify the City of the make, model and characteristics of the pig to be used. This description shall be sufficient to fully identify and describe the pig to be used. If the pig has not been previously approved for this use by the City, the submittal shall be a formal shop drawing and be accompanied by a letter from the manufacturer stating that the pig is designed to be used with lined pipe and will not, if properly applied, abrade or damage the lining.

D. All cleaning methods used by the Contractor shall be subject to approval by the Engineer, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

E. As soon as the installation of each run of pipe is completed, and prior to installation of valves on the main in positions which would interfere with or be damaged by the cleaning operation, the line shall be cleaned by use of a pig with characteristics as specified herein. The pig shall be driven through the line by water pressure and no cables, push rods or other mechanisms that might damage the pipe or lining shall be utilized in this operation.

F. Thorough pigging will be required, and operations shall be sufficient to remove all deleterious materials left in the pipe by construction and shall meet the Engineer's approval. If required by the City, pigging operations shall be scheduled to allow observation by the City and no extra compensation will be allowed for such scheduling.

G. The Contractor shall furnish, install and remove all piping necessary to carry out pigging operations, dispose of water and debris from the operation, and shall exercise care to prevent any damage to the surrounding area and adjoining or adjacent

properties. The Contractor shall furnish either a new or in new condition pig for cleaning operations and the City reserves the right to reject the pig and require provision by the Contractor of a new replacement at no extra charge to the City.

H. After the main has been cleaned to the satisfaction of the Engineer, any valves which could not be placed prior to pigging operations shall be installed using care to prevent entrance of deleterious materials into the cleaned main or valve body. Thereafter, the main shall be tested as specified below unless otherwise ordered or permitted by the Engineer.

I. The dirty water removed from the mains shall be disposed of by pumping out or ahead into the trench, or other approved location, and the Contractor shall exercise care to prevent any damage to the surrounding area and adjacent properties.

J. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

K. The Contractor is required to install nightcaps, plugs or other devices acceptable to the Engineer at the open ends of the pipe installation at the end the work day. This requirement shall apply to installations both above and below the water table.

L. The Contractor is advised that he is solely responsible for any damage caused to the main or its lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

M. The pig for cleaning shall be a Bare Swab No. 5B; density, 1 lb./ft.^{3} by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal.

3.0.4. TESTING OF MAINS

A. Testing of ductile iron pipe for water mains and sewage force mains shall be in accordance with ANSI/AWWA C600, "Installation of Ductile-Iron Mains and Their Appurtenances" Section 5.2 Hydrostatic Testing, latest edition, as modified herein.

B. Pipelines for potable water mains shall be pressure tested at 120 psi for a minimum of two (2) hours in accordance with ANSI/AWWA C600 latest revision. The City may, at its option, allow for a 100 psi pressure test based on the plan design, condition of the existing system or material limitation. No more than 5 psi drop over the duration of the test. Final approval will be based on leakage test results. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any isolated section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

C. All fire hydrants, corporation stops, air release valves, flushing valves, and meter valves in the section being tested shall be opened and left open until water comes out of them, in order to remove as much air as possible from the line.

D. The Contractor shall furnish and install all necessary pumps, piping and fittings, including the corporation stops, to connect the section under test to the source of water. The test pump shall be centrifugal or gear pump producing a steady pressure free of pulsation. The test pressure shall be maintained throughout the duration of the test. Unless otherwise permitted by the Engineer, no static testing will be allowed.

E. During the hydrostatic test, the Contractor shall use a calibrated meter or other device to accurately measure the quantity of water necessary to maintain the test pressure on the gauge.

F. Water shall be pumped into the line through the meter up to the required pressure, and pumping shall be continued to maintain that pressure for a period of two (2) hours, or such longer period as the Inspector requires to inspect the line for leaks. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

G. Since the allowable leakage is defined in gallons per hour, testing shall be conducted in, at a minimum, two (2) independent one (1) hour test periods.

H. Testing shall continue for additional one (1) hour periods if the leakage increases during a previous to a subsequent test period, even if the leakage is within the allowable amount, until the leakage stabilizes or decreases.

I. The maximum allowable leakage for water mains and sewage force mains shall be determined by the following formula from the ANSI/AWWA C600:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: L = allowable leakage in gallons per hour
S = length of pipeline tested in feet
D = nominal diameter of the pipe in inches
P = average test pressure during the leakage test, in pounds per square inch gage

No pipe installation will be accepted if the leakage is greater than that determined by the above requirements. The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his/her representative.

J. The Contractor shall locate and repair all leaks until the leakage is reduced to the limits specified. The Contractor may use the leak detector belonging to the City but shall reimburse the City for the actual cost of the operation of the instrument by City personnel. Any observed leaks or any obviously defective joints or pipes shall be repaired or replaced as directed by the Engineer, even though the total leakage is below that specified above.

K. The tests and repairs shall be continued or repeated until the Engineer is assured that the leakage from the section of line under test is less than the amount specified.

L. Testing of Connections:

4. Cut-in connections shall be pressure tested whenever possible. Cut-in connections that cannot be pressure tested shall be done under the supervision of City forces with a visual system pressure test to verify no leakage is present. Any system pressure test shall be pre-approved by the Engineer.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.2. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.3. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.4. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance with the requirements of the agencies having jurisdiction including but not limited to

City of Opa-Locka, Miami-Dade County, and FDOT.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.2. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

   1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. Wetting and drying operations shall involve manipulation of the entire

width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt

concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any

delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and objectionable matter. If deemed necessary, the base shall be lightly sprinkled with

water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the

manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or

emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving

operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was

installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Concrete pavement, curbs and sidewalk shall be constructed to the lines and grades and dimensions required for a complete installation as shown on the drawings and specified herein.

1.0.2. SUBMITTALS

A. Shop drawings for reinforcing, joint material and mix designs shall be submitted for review in accordance with the Section 01300 “Submittals”.

PART 2 – PRODUCTS

2.0.2. MATERIALS

A. All roadways are to be de-mucked or stabilized with geotextile material in accordance with the geotechnical report and City requirements.

B. Laboratory analysis shall be complete, and the material approved by the Engineer prior to placement.

B. Geotextile material: Woven fabric to be structurally prepared and placed as per manufactures written specification.

C. Sub-grade: limited to maximum six (6”) diameter clean non deleterious material Sub grade to be proof-rolled. Subgrade material supporting the roadway and shoulders shall have a minimum lime rock bearing (LBR) of 40. The stabilized subgrade shall be twelve (12) inches compacted to 98% of maximum dry density as per AASHTO-T-180.

D. Lime rock: The material used in lime rock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor’s option having a minimum percentage of calcium or magnesium of 60; however, only one formation may be used on any contract. Lime rock base course shall have a minimum bearing ratio (LBR) of 100 and shall be minimum of eight (8) inches thick. Base material shall be compacted to a density of not less than 98% of maximum dry density as determined by AASHTO-T180 under all paved areas.

1. Composition:

a. The lime rock material shall contain not more that 0.5 percent of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

b. Lime rock material shall contain not less than 70 percent of carbonates of calcium and magnesium. The maximum percentage of water sensitive clay material shall be three (3).

2. Gradation: At least 97 percent (by weight) of the material shall pass a 3 1/2-inch sieve and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

3. Quality:

   a. The lime rock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces or lumps, balls or pockets of sand or clay size material in sufficient as to be detrimental to prevent proper bonding, finishing or strength of the lime rock base. Lime rock material shall be nonplastic, and the liquid limit shall not exceed 35.

   b. Lime rock material shall have an average LBR value of not less than 100.

E. Sidewalks:

1. The replacement of gray concrete sidewalks throughout the City shall be with the Miami-Dade County's sidewalk color standard, unless otherwise specified by any applicable City land use board, in accordance with Resolution 2019-30800.

2. The Public Works Director has the authority to determine on a street-by-street basis if replacement of sidewalks to Miami-Dade County's sidewalk color standard is appropriate.

2.0.1. CONCRETE

A. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this section suitable to the specific conditions of placement.

B. Cement:

1. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

2. Only one brand of cement shall be used in any individual structure unless approved by the Engineer. Cement which has become damaged, partially set, and lumpy or caked shall not be used the entire contents of the sack or container which contains such cement will be rejected. No salvage or reclaimed cement shall be used.

3. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

4. Slump shall not exceed six inches (6”).

5. Concrete for underground work shall be acid resistant cement and shall maintain a minimum compressive strength of 4000 psi in 28 days.

6. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

7. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

8. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected. The Contractor shall provide suitable means for storing and protecting the cement against dampness. Bags of cement which for any reason may become partially set, or which contain lumps of caked cement, shall be rejected. In no instance shall any portion of a bag of damaged cement, or a bag containing lumps of caked cement, be used. Cement salvaged from discarded or used sacks shall not be used. Different brands of cement, even if tested and approved, shall not be mixed during use, nor used alternately in any section of the work without written permission of the Engineer.

C. Aggregates:

1. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

2. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

3. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

4. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

5. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0. F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

6. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions

D. Water: Water shall be taken from a potable water supply and shall be fresh, clean and free from injurious amounts of oil, acid, alkali or organic matter.

E. Admixtures:

1. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

2. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

   a. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

   b. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day’s operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are “Eucon 37” or Plastol 5000 by the Euclid Chemical Company, “Master Rheobuild 1000 or Master Glenium Series” by BASF, and “Daracem 100 or Advaflow Series” by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

   c. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year’s duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are “Accelguard 80/90 or NCA” by the Euclid Chemical Company and “Daraset” by W.R. Grace.

d. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

3. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

F. Membrane Curing Compound: Membrane curing compound shall conform to the requirements of AASHTO Designation M 148, Type 1-clear, or type 2-white pigmented.

G. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the nonextruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

H. Reinforcing and Welded Wire Fabric: Reinforcing and welded wire fabric shall be 6"X6" – 10/10 steel bars to be used in curb & gutter and wire mesh in sidewalk.

2.0.2. CONCRETE PAVERS

A. Concrete pavers shall Miami-Dade County's color standard approved equal. Use of other colors to complement project design theme and/or match existing pavers' configuration require shall only be used with written approval from the City of Opa-Locka Beach Public Works Department.

B. All concrete pavers shall have a skid resistant finish.

C. Provide products supplied by a member of the Interlocking Concrete Pavement Institute (ICPI) as called for in the Drawings and/or as specified herein.

D. Concrete pavers shall conform to the requirements of ASTM C936.

E. Concrete pavers shall have an average compressive strength of 8,000 psi with no individual unit under 7,200 psi.

F. Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C140.

2.0.3. TEXTURED PAVEMENT

A. "Street Bond SP150E Coating Material" refers to a high performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by Integrated Paving Concept, Inc. (Tel. 800- 688-5652), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "Street Bond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to Street Bond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the drawings. The same Street Bond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of Street Bond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with Section 6 along with the following documentation:

   1. Manufacturer's specifications and procedures for materials and installation.

   2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's specifications and procedures has been tested in accordance with the ASTM E-274, Skid Resistance of Paved Surfaces using a standard ribbed full scale tire at a speed of 40 mph (FN40R), and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ROADWAY MATERIALS

A. Subgrade: The work shall consist of bringing the bottom of the excavations and the top of the embankments of the roadways between the outer limits of the roadway to a surface conforming to the lines, grades, and cross sections shown on the plans, of uniform required density, ready to receive the base or paving course. The final elevation of the subgrade shall be within 0.1 foot of the required elevation.

   1. All submerged stumps, roots, and other unsuitable matter encountered in the preparation of the subgrade shall be removed and replaced with a suitable material.

2. The material in the top 12” of subgrade shall have a minimum CBR of 25 when compacted to 95% of maximum density as determined by AASHTO Specification T 180-74. In areas such a condition does not exist, the top 12” of subgrade shall be stabilized as described below:

3. Stabilizing Material: Where stabilized subgrade and shoulders are required, the subgrade and shoulder material shall have a minimum California Bearing Ratio Material Value not less than 25. If the in place subgrade or shoulder material has a CBR value less than 25, a suitable stabilizing material shall be added. Such stabilizing material shall be crushed lime rock, coarse lime rock screenings, or any other stabilizing material approved by the Engineer.

4. Suitable stabilizing materials obtained from an existing base or pavement which is to be replaced or abandoned may be used providing that such material contain no fragments larger than 3 ½ inches in diameter.

5. The entire subgrade, including 2 feet beyond the edge of the proposed pavement, shall be thoroughly plowed, scarified, and mixed to a depth of not less than 6 inches below grade. All pot holes and other irregularities shall be filled with suitable material or trimmed down as the case may be, prior to compacting. If the area is cut to grade in natural lime rock, the top 6 inches shall be thoroughly plowed, scarified, and mixed. This plowed, scarified, and mixed layer shall be compacted to not less than 95 percent of the maximum density as determined by AASHTO Specifications T 180-74 prior to the placement of the base course.

6. After the subgrade has been prepared as specified above, the Contractor shall maintain it free from ruts, depressions, and damage resulting from the hauling and handling of any material, equipment, tools, etc. Ditches or drains shall be constructed and maintained along the completed subgrade section. Just before the base course is laid, the subgrade shall be tested as to, elevation and density.

B. Transporting Lime rock: The lime rock shall be transported to the point where it is to be used, over rock previously placed if practicable, and dumped on the end of the preceding spread. No hauling over the subgrade or dumping on the subgrade shall be done

C. Spreading Lime rock:

1. When using new material, the lime rock shall be spread uniformly, and all segregated areas of fine or coarse rock shall be removed and replaced with well-grade rock.

2. When the specified compacted thickness of the base is greater than 6-inches, the base shall be constructed in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished base, or enough additional to bear the weight of the construction equipment without disturbing the subgrade.

3. When using the existing base material, the Contractor shall expose the existing base material to the final base grade shown on the drawings. The Contractor shall then proceed with scarifying the top 6 inches of the base and reworking and compacting the material to achieve the required cross-section.

4. Minimum longitudinal slope shall be 0.3% for all roadways. For roadways with gutters, the longitudinal slope may be reduced upon approval by the Public Works Department.

D. Compacting and Finishing Base:

1. General:

   a. For single course base, after spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compacting.

   b. For multi lift base course, the first course shall be four (4) inches thick compacted cleaned of foreign material, bladed and brought to a surface cross section approximately parallel to that of the finished base. Prior to the spreading of any material for the upper course, the density test for the lower course shall be made and the Engineer shall have determined that the required compacting has been obtained. After the spreading of material for the second course is completed, its surface shall be finished and shaped so as to produce the required grade and cross section after compacting and free of scab and laminations.

2. Moisture Content: When the material does not have the proper moisture content to insure the required density, wetting or drying will be required. If the material is deficient in moisture, water shall be added and uniformly mixed in by discing the base course to its full depth. If the material contains an excess of moisture, such excess shall be reduced or removed until the required moisture content is attained before being compacted. Wetting or drying operations shall involve manipulation of the entire width and depth of the base as a unit.

3. Density Requirements: As soon as proper conditions of moisture are attained, the material shall be compacted to a density of not less than 98 percent of the maximum density as determined by AASHTO Designation T-180 as described below:

   a. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determinations on the finished base.

b. At least three density determinations shall be made at the completion of each course, also the density determinations shall be made at new/replaced every utility crossings and also at every 7,000 square feet of roadways or at more frequent intervals if deemed necessary by the Engineer.

4. Correction of Defects:

a. If at any time the subgrade material should become mixed with the base course material, the Contractor shall dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

b. If cracks or checks appear in the base, either before or after priming, which in the opinion of the Engineer would impair the structural efficiency of the base course, the Contractor shall remove such cracks or check by re-scarifying, reshaping, adding base material where necessary and recompacting.

E. Testing Surface: The finished surface of the base course shall be checked with a templet cut to required crown and cross section and with a 10-foot straightedge laid parallel to the centerline of the road. All irregularities greater than 1/4-inch shall be corrected by scarifying and removing or adding lime rock as may be required, after which the entire area shall be recompacted as specified herein before.

F. Thickness Determinations:

1. The thickness of the compacted lime rock base shall be measured at intervals of not more than 200-feet. Measurements shall be taken at various points on the cross sections prior to the application of the prime coat.

2. The measurements shall be taken in holes through the base of not less than 3-inches in diameter. Where the compacted base is deficient by more than 1/2-inch from the thickness called for on the drawings, the Contractor shall correct such areas by scarifying and adding lime rock. The base shall be scarified and rock added for a distance of 100-feet in each direction from the edge of the deficient area. The affected areas shall then be brought to the required state of compaction and to the required thickness and cross section.

G. Priming and Maintaining:

1. The prime coat shall be applied only when the base meets the specified density requirements and the moisture content in the top half of the base does not exceed 90 percent of the optimum moisture content of the base material. At the time of priming, the base shall be firm and unyielding.

2. The Contractor will be responsible for assuring that the true crown and grade are maintained with no rutting or other distortion and that the base meets all the requirements at the time the surface course is applied.

3.0.2. INSTALLATION OF CONCRETE

A. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little rehandling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

B. Steel reinforcement is called for on the drawings shall be placed at mid slab depth and the fabric shall be maintained at this location during the placing and finishing operations.

C. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

D. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

E. Striking off, Consolidating and Finishing Concrete:

1. Immediately after the placing, the concrete shall be struck off, consolidated and finished, to produce a finished pavement conforming to the cross section, width and surface finish required by the drawings and specifications. The sequence of operations shall be as follows: strike-off; vibratory consolidation; screeding; floating; removal of laitance; straight edging; and final surface finish. Strike-off, consolidation and finishing shall be accomplished in a manner such as to avoid damage to, or misalignment of, joint assemblies, dowels and other embedded items.

F. Straight edging and Surface Correction:

1. After floating has been completed and the excess water removed, but while the concrete is still in a plastic state, the surface of the concrete shall be tested for trueness with an accurate 10-foot straightedge. The straightedge shall be furnished by the Contractor. The straightedge shall be held in successive positions parallel to the road center line, in contact with the surface, and the whole area tested from one side of the slab to the other as necessary. The advance along the road shall be in successive stages of not more than one-half the length of the straightedge. Any depressions shall be immediately filled with freshly mixed concrete and struck-off, consolidated and refinished. High areas shall be cut down

and refinished. Straightedge testing and surface correction shall continue until the entire surface appears to conform to the required grade and cross section.

2. As soon as the concrete has hardened sufficiently to be walked on, straight edging shall again be done. All surface irregularities exceeding ¼-inch in a 10-foot shall be corrected by grinding as directed by the Engineer.

G. Final Finish: As soon as the water sheen has disappeared from the surface of the pavement and just before the concrete becomes non-plastic, a light broom finish shall be given to the surface.

H. Edging:

1. After the final finish has been applied, but before the concrete has become non-plastic, the edge of the pavement along each side of the strip being placed, on each side of transverse and longitudinal contraction joints and construction joints and along structure extending into the pavement, shall be carefully rounded to a ¼-inch radius except as otherwise indicated. A well-defined and continuous radius shall be produced and a smooth, dense mortar finish obtained. All concrete shall be completely removed from the top of the joint filler.

2. All joints shall be checked with a straightedge before the concrete has become non-plastic and, if one side of the joint is higher than the other or the entire joints is higher or lower than the adjacent slabs, corrections shall be made as necessary.

I. Joints:

1. Transverse Construction Joints: Transverse construction joints shall be constructed at the end of all pours and at other locations where the paving operations are stopped for as long as 30 minutes. Construction joints, however, shall not be placed within ten feet of any other transverse joint or of either end of a section of pavement. If sufficient concrete has not been placed to form a slab at least ten feet long, the excess concrete, back to the last preceding joint, shall be removed. The joints shall be formed by placing a wood or metal bulkhead accurately and securely in place, in a plane perpendicular to the profile and center line of the pavement.

2. Transverse & Longitudinal Contraction Joints: Construction joints shall be constructed at the interval indicated in the plans and shall consist of planes of weakness created by an edging tool. The cut in the fresh concrete shall be perpendicular to the surface of the pavement, shall extend to a depth of 1/3 of its thickness (1 ½" for 4" pavement) and shall have tooled edges as described above.

3. Expansion Joints: ½" Expansion Joints shall be formed by placing performed joint filler around all structures and foundations where pavement abuts curbs and gutters and at intervals not to exceed 100'.

4. Cleaning and Sealing Joints: Joints which are to be sealed, shall be filled with joint sealing material before the pavement is opened to traffic and as soon after completion of the curing period as is feasible. Just prior to sealing, each joint shall be thoroughly cleaned of all foreign material (including any membrane curing compound) and the joint faces shall be clean and surface-dry when the sealer is applied.

    a. The sealing material shall be applied to each joint to conform to the details shown on the drawings and in accordance with the manufacture's recommendation. The pouring shall be done in such manner that the material will not be spilled on the exposed surfaces of the concrete. Any excess material on the surface of the concrete pavement shall be removed immediately and the pavement surface cleaned.

    b. All cracks occurring in the pavement prior to its acceptance shall be cleaned out and sealed as specified above, except that the cracks and fractures shall be completely filled with joints sealer and any excess filler material cut down level with the pavement surface.

3.0.3. INSTALLATION OF CONCRETE PAVERS

A. Install paver blocks as manufactured by licensee of Paver Systems, Inc., in accordance with the Drawings, manufacturer's recommendations, and Standard Details. Paver block construction shall conform to the requirements of Interlocking Concrete Pavers Institute (ICPI).

B. Where necessary to cut blocks, cutting shall be done so as leave tight joint along all adjacent edges and surfaces. Smoothly split or sawn blocks only will be accepted.

C. After final vibrating/compaction there shall be no more than ¼ inch deviation from proposed grades.

D. Installation of concrete pavers in non-roadway areas shall be in accordance with the following.

D. Replacement of all underground utilities that are in conflict with paver installation.

E. The finished subbase shall be approved before placement of limerock base.

F. The limerock base course shall be compacted to 98% of maximum dry density as per AASHTO T-180.

G. The finished limerock base course shall be approved by the City or designee prior to placement of the sand leveling course.

H. The uncompacted sand leveling base shall be screened over the compacted limerock base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

I. The paver blocks shall be laid in the pattern approved by the City of Opa-Locka Public Works Department in accordance with the Standard Details.

J. Construct concrete header curb in accordance with the Standard Details.

E. Installation of concrete pavers in on roadways shall be in accordance with the following.

K. Replacement of all underground utilities that are in conflict with paver installation.

L. The finished subbase shall be approved before placement of the concrete slab.

M. The concrete pavers on the roadway shall be installed over a 6-inch-thick concrete base reinforced with galvanized steel wire mesh 6X6-W1.4xW1.4 with 1½ inches bedding between the concrete base and the concrete pavers.

N. The uncompacted sand leveling base shall be screened over the concrete base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

O. Construct concrete header curb in accordance with the Standard Details..

3.0.4. INSTALLATION OF TEXTURED PAVEMENT

A. Applying a patterned and/or textured treatment to asphalt or concrete, in accordance with manufacturer's recommendations. Applications include the following:

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated / imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the Engineer will check the area at random location for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e. all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.5. INSTALLATION OF SIDEWALK

A. Sidewalks at intersections and driveways shall be six (6) inches thick. Driveways shall include a 4-foot section at 2% maximum cross slope as per Standard Details and FDOT Index 522-03.

B. Sidewalks not at intersections or driveways shall be four (4) inches thick.

C. The concrete for sidewalk shall be 3,000 psi, with Miami-Dade County's sidewalk color standard match existing.

D. The concrete shall be reinforced with 6X6-W1.4xW1.4 welded steel wire mesh.

E. Wherever possible, sidewalks shall be designed with a minimum effective width of 6 feet on residential streets and 8 feet on collectors and arterials. Effective sidewalk widths shall be determined in accordance with the Miami Dade County Standard Details, firstly, and FDOT if not specified.

F. All wayfinding signage shall be installed in the back of the sidewalk wherever permitted by sight visibility, otherwise 4 feet minimum clear pedestrian path around sign shall be provided.

G. Repair of Concrete Sidewalk Surface Defects:

P. Remove and replace all concrete surfaces that contain surface defects, which includes, but not limited to cracking, cracks which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets and other objectionable and rough conditions and other objectionable conditions deemed unacceptable to the Engineer immediately after form removal. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness.

Q. Concrete rejected for any reason is to be removed and replaced, including labor, forms and reinforcing, to meet specifications at no additional cost to the City. Compounds for adhesion or as patching ingredients may be used, if approved by the City or designee. All repair of surface defects to be made require the approval of the City or designee, as to the method and procedure. Approval of the completed work must be obtained from the City or designee.

R. Remove existing sidewalk, or curb and gutter to either the nearest joint beyond or to where no remaining section is less than five (5) feet long.

3.0.6. INSTALLATION OF CURB RAMPS

A. It is the policy of the City of Opa-Locka Public Works Department to install truncated dome detectable warnings on the curb ramps, in compliance with the ADA Standards and PROWAG requirements for detectable warnings on walking surfaces and with FDOT standards. Curb ramps shall be directional and aligned with the crosswalk. Refer to the City of Opa-Locka Street Design Guidelines.

B. The installation of truncated domes on curb ramp shall be in compliance with the FDOT Index 522-002 and FDOT Specifications Section 527 and associated QPL. This Specification excludes stamped concrete detectable warnings due to poor performance.

C. The detectable warnings are required to have a dark-on-light or light-on-dark contrast with the surrounding concrete. Use Miami-Dade County' color standard on the detectable warning portion of the curb ramp. The color of the detectable warnings shall be integral with the device material.

D. Provide certification from an independent testing laboratory that the applied detectable warning device meets the above minimum requirements. Submit this certification for review and approval by the City or designee at least 10 days before the planned installation of any applied detectable warning device.

E. At least ten (10) days before the first installation of any applied detectable warning device, submit manufacture's installation recommendations and instructions for review and approval by the City or designee.

F. Special Considerations: 2 curb ramps per corner should always be used unless technically infeasible. US Access Board Public Rights-of-Way Access Advisory Committee strongly discourages single installations where possible because single ramps can:

1. Misdirect blind pedestrians who use the slope of curb ramps as a cue.

2. Increase crossing times for persons who use wheeled mobility aids and can place users into oncoming traffic at small radius corners where it is difficult to provide landing space at the bottom that is wholly within marked crossings.

3. Drivers may not be as alert to persons crossing at the apex of a corner.

G. If a single diagonal curb ramp is installed because of technical infeasibility, a 48 inches clear space wholly contained within the crosswalk must be provided at the bottom of the curb ramp to allow wheelchair users enough room to maneuver off of the ramp and into the crosswalk

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section includes minimum construction requirements for standard sewer manholes and precast concrete wet wells. It also includes precast concrete manhole sections with bell and spigot joints with masonry transition to covering, anchorage, coating/lining and accessories.

1.0.2. REFERENCES:

Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current editions of the following standards:

A. Florida Building Code

B. ACI 318, Building Code Requirements for Reinforced Concrete; ACI 350 Code Requirement for Environmental Engineer Construction Structures.

C. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

D. ASTM C62 - Specification for Building Brick (Solid masonry units made from Clay or shale).

E. ASTM C478 - Precast Reinforced Concrete Manhole Sections. F. ASTM A123 - Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

1.0.3. SUBMITTALS, INSPECTIONS

Submit the following information for approval. Fabrication shall not begin until submission has been approved.

A. Satisfactory evidence that plant and production methods meet the requirements of PCI MNL 116 for the Quality Control of the Precast Plant, Concrete Batch Plant and Testing Lab.

B. Submit Design mix to the Engineer prior to fabrication.

C. Complete shop drawings of both concrete structure and castings and showing all dimensions, reinforcement data, concrete strengths, etc. If of a non-standard design or if required by the Engineer of Record submit design calculations and data. All computation shall bear the seal of a Professional Engineer registered in the State of Florida.

D. Manhole and Wet Wells: The City shall have the option of witnessing the manhole wet well pour, reinforcing or formwork prior to fabrication. Provide the Engineer a schedule of the manhole fabrication at the preconstruction meeting.

E. Provide a rebar cutting lists for Pump Station Wet Wells. The rebar cut list is not required for standard manholes.

F. Cylinder breaks shall be done for each lot in accordance with FDOT Standards (max of 50 structures per LOT). The manufacturer shall maintain records of the cylinder breaks for each design mix. The 28-day concrete cylinder break reports shall be submitted to the Department once the 28-day before the project closeout.

1.0.4. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience. United Concrete Products, Landmark Precast, Concrete Products of the Palm Beaches, TJ Precast, US Concrete Products or Approved equal.

B. Quality Control Plan approved by the FDOT. The testing laboratory and batch plant shall be included in the FDOT Quality Control Plan.

C. The Precast Manufacturer shall have a stamp from the Quality Control Manager on each completed precast structure. The Quality Control Manager Stamp shall indicate that the manhole was constructed in accordance with ASTM C478 and Municipality Standards and the date that the structure was fabricated.

1.0.5. TRANSPORTATION

A. A. The precast concrete structure shall cure for a minimum of 72 hours. Transport of the precast structure to the jobsite is not allowed during the 72 hour curing period.

B. Comply with all applicable requirements of FDOT Section 450-16 Handling, Storage, Shipping and Erection.

PART 2 – PRODUCTS

2.0.1. MATERIALS

Precast manholes shall conform to the requirements of ASTM C478, latest edition, the Miami-Dade Water and Sewer Department Standard Details and the following:

A. Properties:

1. Reinforcement of Grade 60 bars. (Pump Station Wet Wells require rebars not wire mesh reinforcing).

2. Concrete 4,000 psi.

3. Water Cement Ratio: 0.40 to 0.34 Standard Manholes, 0.34 Pump Station Wet Wells.

4. Waterstops: Ribbed PVC Waterstop with centerbulb.

B. Cement shall be Type II with a **maximum aggregate size of #57**. Aggregate shall be **well graded** to produce a less porous and stronger concrete.

1. **Gravity Sewer System Manholes:** In sanitary sewage applications, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer terminal manhole within a 350 foot radius of the pump station, drop manholes, or where called for in the plans and/or specifications shall have a concrete protective coating or a antimicrobial admixture in the concrete mix.

   The antimicrobial admixture in the concrete mix is specified below:

   a. An antimicrobial agent, ConMICShield® , or approved equal, shall be used to render the concrete uninhabitable for bacteria growth.

   b. Contractor shall mix the liquid antimicrobial additive with the total water content of the concrete mix design in a proportion of 1 gallon per cubic yard. In the case of repairs to damaged concrete a proportion of 2 gallons per cubic yard shall be utilized.

   c. In some instances all of the concrete in the structure will receive the additive and in other instances only a portion of the concrete will receive the additive. Hence, the Contractor shall apply the additive only as directed in the specific instance.

   d. Precast Plant shall submit a letter of certification to the Department, stating that the correct amount and correct mixing procedure was followed for all antimicrobial concrete.

   e. ConMICShield® antimicrobial additive shall be as manufactured by ConMICShield® Technologies, Inc.; 541 Tenth Street NW #233, Atlanta, GA 30318; Phone: (877)543-2094

C. Minimum shell thickness of manholes shall be eight (8) inches.

D. Lifting holes through the structure will not be permitted

E. Three to five courses of brick shall be constructed atop the manhole corbel for height adjustment. Manhole adjustment grade rings may be utilized in lieu of clay bricks.

F. Precast Joints above Elevation +4.0. and Waterproofing

1. Standard Manhole: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Non-Shrink Grout both inside and outside of the joint. Wrap the outside Corbel and Exterior joint with a heat activated high shrink membrane.

2. Pump Station Wet Wells: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Xypex Concentrate Cementitous Slurry or approved equal to the exterior and interior of the joint between precast members for waterproofing.

G. Holes for pipe connections, with a diameter equal to the outside dimension of the connecting pipe plus an additional 4-inches, shall be formed in the manhole walls. No cutting or chipping of the pre-formed holes, or cutting additional holes in the precast concrete walls will be permitted.

H. The bottom slab shall be cast monolithically with the lower section and the longitudinal reinforcement extending into the slab. The free air drop of the mix shall not exceed five feet.

I. No construction joints will be allowed below an elevation of four feet above mean sea level. Construction joints will be allowed above elevation+4.0, if adequate keyways and waterstops, approved by the Department (Ribbed PVC waterstop with centerbulb), are provided. The Department may approve an alternate joint method in cases of excessively deeper and heavy structures.

J. Built-in ladders or climbing rungs will not be permitted in any sanitary sewer manhole and only in other structures where shown on the Plans and called for in the specifications.

K. Openings shall be sealed with hydraulic cement non-shrink grout on both the exterior and interior of the structure.

L. Furnish manholes with accessories listed under "Manhole Accessories", below.

M. Lid and Frame: See Section 05550, "Castings".

N. Waterproofing:

1. Xypex Crystalline Waterproofing Admixture C-1000R with red dye or approved equal, applied at 3% of the volume of Portland cement in the manhole by volume.

2. Rheomac 300D Admixture as manufactured by BASF with red dye applied at 2% of the volume of Portland cement in the manhole by volume.

3. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

Note: The Engineer may accept certification from the precast fabricator in lieu of the red dye

2.0.2. CLAY BRICK UNITS AND GRADE RINGS

A. Clay brick shall be used in manhole construction. Clay brick shall conform to ASTM Standard C32, "Building Brick (Solid Masonry Units Made from Clay or Shale)". Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed in any wall. Under no circumstances shall brick with holes be utilized anywhere in construction of a manhole or other structure unless specifically called out on the Plans or in the Specifications.

B. Manhole adjustment grade rings may be utilized. Rings shall be made of 100% recycled HDPE and available in cone opening diameters of 24, 27, 30 and 36-inches. Slope adjustment shall be attained by rotation of "wedge" rings from 4.1% to 0% grade. Rings shall have been tested to withstand HS25 loading through at least 1,100,000 cycles without cracking or other damage. Rings shall not be damaged by hydrogen sulfide manhole conditions and shall be waterproof when assembled with approved butyl sealant. Ring shall weigh six pounds or less and be equipped with UV inhibitor. Rings shall have been in successful service in multiple locations within the US for at least ten years and shall be warranted for five years. Rings shall be LadTech, Inc. HDPE Recycled Adjusting Rings or approved equal.

C. Exterior Shrink Membrane not required on the HDPE Grade Rings.

2.0.3. MORTAR AND GROUT

As specified in Section 04060 and 03600, respectively. Only Type II cement shall be used.

2.0.4. REINFORCEMENT

As specified in drawings firstly, and on Miami-Dade County Standard Details.

2.0.5. SUMP

Where required, formed integrally with the base slab.

2.0.6. CONCRETE PROTECTIVE COATINGS **(Gravity Sewer Manholes)**

A. For manholes standard manholes that do not have a concrete protective coating or an antimicrobial additive (ConShield)in the mix, coat the interior of the manhole with Bitumastic 300M or approved equal, 16 mils minimum thickness. The manholes with a concrete protective coating or ConShield anti-bacterial admixture shall not have Bitumastic on the interior of the manhole.

Locations that require a Concrete Protective Coating or the Con Shield Admixture:

1. Manholes receiving the discharge of a force main.

2. Manholes within a 350 foot radius of a pump station wet well.

3. Drop manholes (if a drop connection is added to an existing manhole the existing manhole shall be rehabilitated with a concrete protective coating).

4. Any manhole location determined by the Engineer to have the probability of generating large quantities of sewer gas.

B. All concrete protective coating systems shall be pre-approved by the Water and Sewer Department based on testing done within the WASD system. Only products that have had a successful test application within the Miami-Dade Water and Sewer Department system and approved by WASD forces shall be allowed.

PREAPROVED PRODUCTS LIST- concrete protective coatings (standard manholes)

1. Available Manufacturers: The manhole coating products below have passed the WASD testing protocol and have been approved for use for rehabilitation of standard manholes. The manhole rehabilitation products shall be used as a complete system with no third party products used unless approved in writing by the coating manufacturer. A one year warranty on the complete coating system from the project completion is required.

    a. Uroflex as manufactured by Epoxytec International

    b. PPC as Manufactured by Polymorphic Polymers Corporation

    c. SP15 Spray Mortar, Sewer Guard HBS 100 Epoxy Liner by BASF

    d. Permaform MS-10,000 Fortified with ConShield or Cor-Guard Epoxy

    e. SprayRoq, Spray Wall and SprayShield GT Coating

    f. GEOKRETE System as manufactured by Quadex

    g. Mainstay DS-5 High Build Epoxy, Mainstay ML-72 Restoration Mortar

    h. GML Coating System: Green Monster Epoxy, GML-30 and GML-60 Epoxy Cement

    i. Raven Lining System: Raven 405 Epoxy, Raven 755 Epoxy Mortar

2. The manhole chimney shall utilize a flexible concrete protective coating. The acceptable flexible interior coatings for the manhole Chimeny are Epoxytec Uroseal, Uroflex or Geokrete.

C. Due to the probability of sewer gas generation, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer, drop manholes, or within a 350-foot radius of the terminal manhole immediately upstream of the pump station shall be either constructed of concrete containing Con^{MIC}Shield® antimicrobial additive or lined on all interior concrete surfaces with a pre-approved concrete protective coating or approved equal. Concrete protective coating system shall fully protect openings, such as for pipes, to insure that corrosive attack cannot take place at these locations. Protective system design for these areas will be checked as shop drawings. Note that boot systems are not accepted by the Department.

Since the proprietary grouts used to close the annular area between the manhole wall and pipe entering or leaving the manhole are not compatible to the addition of Con^{MIC}Shield® these areas require liner or coating (as acceptable to the Engineer) protection even in manholes constructed of concrete containing this material.

D. All manhole exterior surfaces, from finished grade to base, shall be coated with Carboline Bitumastic 300M, 2 coats 16 mils minimum thickness or have Xypex/BASF Crystalline Waterproofing Admixture, applied at 2 to 3% of the volume of portland cement in the manhole by volume. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

E. If Con^{MIC}Shield® anti-microbial agent is used, interior coating and liners can be eliminated except as specified above. 2.07 CONCRETE ADDITIVE AND PROTECTIVE COATINGS (Pump Station Wet Wells).

2.0.7. MANHOLE ACCESSORIES:

All new sanitary sewer manholes shall be furnished with the following items. Where existing manholes will be modified or are scheduled to be refurbished, rehabilitation shall also include the following items unless otherwise approved by the Department.

A. Provide concrete protective coating system for manholes installed in locations identified to have high levels of sewer gas.

B. Provide high density polyethylene manhole infiltration inserts in accordance with Section 02625, unless the Department requires the installation of stainless steel insert.

C. Exterior Shrink Membrane on Corbel and Exterior Joint; On all manholes (excluding the HDPE grade rings)install a heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section. Membrane shall be Wrapid Seal, by Canusa Corrosion Protection and Sealing, or approved equal with the following properties:

PRODUCT COMPONENT	PROPERTY	TEST STANDARD	UNIT	RESULTS
ADHESIVE	Softening Point	ASTM E28	Deg. C (Deg. F)	100 (212)

	Lap Shear Strength	DIN 30 672	N/cm2 (psi)	8 (12)
BACKING	Tensile Strength	ASTM D638	MPa (psi)	20 (2900)
	Elongation	ASTM D638	%	600
	Hardness	ASTM D2240	Shore D	46
	Abrasion Resistance	ASTM D1044	mg	45
SLEEVE	Peel Strength	ASTM D1000	N/cm2 (psi)	15 (9)
	Water Absortion	ASTM D570	%	0.05
	Low Temp. Flexibility	ASTM D2671D	Deg. C (Deg. F)	-40 (-40)

PART 3 – EXECUTION

3.0.1. EXCAVATION

A. Refer to Section 02314, "Excavation, Backfill and Fill for Structures" for specific procedures, requirements and testing methods appurtenant to the work under this Section.

B. Excavation shall extend to a level 12-inches below the level of the outside bottom of the base slab. If necessary, provide sheeting and shoring for the excavation.

C. Backfill resulting excavation with drainfield limerock or specified bedding material to a level to receive the structure at the proper elevation.

3.0.2. GENERAL INSTALLATION

A. The precast base shall be set level, with the walls plumb on the graded crushed rock bedding.

B. B. If any surfaces of structures are exposed to view and to a depth of 6 inches below grade, the Contractor shall fill all depressions and all air holes with mortar, dampen surfaces, and apply an approved bonding agent then spread slurry, consisting of one part cement and one and one-half parts sand, by damp loose volume, on the surface with clean burlap pads and sponge rubber floats. The Contractor shall remove any surplus by scraping and then rubbing with clean burlap. Finish surface shall be suitable to receive paint.

3.0.3. INSTALLATION OF MANHOLES

A. Place base slab and manhole sections plumb and level. Coat exterior of precast structure with Bitumastic 300M or approved equal. Install heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section.

B. During all backfilling operations, the backfill level shall be kept even on all sides of the structure. Exercise every precaution to prevent damage to, or unplanned loading of, the structures and its appurtenances.

C. Lay clay brick in running bond. A minimum of three and a maximum of five courses shall be constructed atop each manhole corbel. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other work. Stucco inside and out with 3/4-inch of mortar.

D. Set cover frames and covers level without tipping, to correct elevations.

E. Exterior surfaces of all structures shall be painted prior to the installation as specified elsewhere herein.

F. Openings shall be sealed with non-shrink grout. No expanding grout shall be allowed.

G. After satisfactory installation and testing, all interior concrete surfaces of the new manhole shall be seal coated in accordance with Section 2.06-A.

H. The invert channels of the manhole shall be formed of brick or brick rubble thoroughly bedded and covered with sand-cement grout, accurately shaped to a semi-circular bottom conforming to the lower half of the connecting sewer pipe. Steep slopes outside the invert channels shall be avoided. Changes in size and grade shall be made gradually and evenly. Changes in the direction of the sewer or entering branch shall be a smooth curve with radius as long as practicable.

I. It shall be the Contractor's responsibility to assure that the frames and covers are set to match proposed finish paving grades at the manhole locations.

J. Gravity sewers shall connect to the manholes in accordance with Standard Details SS 7.0 and Section UC-250 "Gravity Sewer Systems".

3.0.4. ALTERNATE INSTALLATION

Installation methods given below in this Section shall only apply if permission is granted by the Engineer of Record to use the "Alternate Method of Construction" as specified elsewhere herein. All provisions of that Section shall be applied to the installation of the structures with the specific modifications as follows:

A. Excavation

Excavation shall be carried to a depth of two feet below the bottom of the base slab.

B. Special Bedding

1. Bedding shall be crushed stone or gravel meeting the requirements of ASTM Standard C33 "Concrete Aggregates", latest edition, gradation 67.

2. The bedding shall be placed in the excavation from cut bottom to the level of the bottom of the slab. Thereafter it shall be thoroughly rammed and tamped by use of a crane and weight or other means suitable to the Engineer of Record to provide a stable base for the structure. Tamping and, if necessary, additional filling shall be carried on until the Engineer of Record is satisfied that a suitably stable base has been created for the structure.

C. Backfill

1. After the structure is installed, special bedding material as specified immediately above shall be carefully hand or machine tamped around the structure up to a level of no more than eighteen inches above the water level. Thereafter the procedures and materials specified for backfill and compaction, shall be used to complete the installation.

2. During all backfilling operations the backfill level shall be kept even on all sides of the structure and the Contractor shall exercise every precaution to prevent damage to, or unplanned loading of, the structure or its appurtenances.

END OF SECTION

02620 CORRUGATED HDPE DRAINAGE PIPE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, joints and accessories within the limits of work, as shown on the Plans and specified herein. This section also includes the furnishing and construction of such joints and such connection to existing pipes, catch basins, inlets, manholes, among other structures, as required to complete the work as indicated on the Plans.

B. The Contractor shall perform the final cleanup and restore all site conditions to original or better conditions.

1.0.2. RELATED SECTION

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

1.0.3. QUALITY CONTROL

A. All material and installation shall be in accordance with the City‘s Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City’s designated representative in the field shall be followed by the Contractor.

C. The tubing or pipe shall not be left exposed to sunlight for periods exceeding the manufacturer’s recommendation.

D. For storm drain side drain, french drain and cross drain corrugated polyethylene pipe shall meet the requirements of AASHTO M 294 and 948-2.3.

E. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

F. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

G. Obtain pipe from a production facility that is listed on the FDOT Production Facility Listing. Producers seeking inclusion shall meet the requirements of Section 105 of FDOT Standards.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

B. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

Table 948-1
Stress Crack Resistance of Pipes

Pipe Location	Test Method	Test Conditions	Requirement
Pipe Liner	FM 5-572, Procedure A	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time of the pipe liner shall be ≥18.0 hours, no single value shall be less than 13.0 hours.
Pipe Corrugation(1) (molded plaque)	ASTM F2136	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time shall be ≥24.0 hours, no single value shall be less than 17.0 hours.

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Junction	FM 5-572, Procedure B and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Longitudinal Profiles(6)	FM 5-572, Procedure C, and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Liner and/or Crown(7)	OIT Test (ASTM D3895)	2 replicates (to determine initial OIT value) on the as manufactured (not incubated) pipe.	25.0 minutes, minimum

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Liner and/or Crown(7)	Incubation test FM 5-574 and OIT test (ASTM D3895)	Three samples for incubation of 265 days at 176°F(8) and applied stress of 250 psi. One OIT test per each sample	Average of 3.0 minutes(9) (no values shall be less than 2.0 minutes)
Liner and/or Crown(7)	MI test (ASTM D1238 at 190oC/2.16Kg)	2 replicates on the as manufactured (not incubated) pipe	< 0.4 g/10 minutes
Liner and/or Crown(7)	Incubation test FM 5-574 and MI test (ASTM D1238 at 190°C/2.16Kg)	2 replicates on the three aged sampled after incubation of 265 days at 176°F(8) and applied stress of 250 psi	MI Retained Value(9)(10) shall be greater than 80% and less than 120%.

Note: FM = Florida Method of Test.

(1) Required only when the resin used in the corrugation is different than that of the liner

(2) A higher test temperature (194°F) may be used if supporting test data acceptable to the State Materials Engineer is submitted and approved in writing.

(3) Full test shall be performed on alternative pipe diameter of pipe based on wall profile design, raw material cell classification, and manufacturing process. Full test must be performed on maximum and minimum pipe diameters within a manufacturing process

(4) Computer program to predict the 100 year SCR with 95% lower confidence can be obtained from FDOT.

(5) Single test for the junction and longitudinal profile may be used on alternating pipe sizes within a manufacturing process. Single point tests may not be used on maximum and minimum pipe sizes within a manufacturing process except by approval of the Engineer. Single point tests may be used for quality assurance testing purposes.

(6) Longitudinal profiles include vent holes and molded lines.

(7) OIT and MI tests on the crown are required when resin used in the corrugation is different than that of the liner.

(8) The incubation temperature and duration can also be 196 days at 185°F.

(9) The tests for incubated and "as-manufactured" pipe samples shall be performed by the same lab, same operator, the same testing device, and in the same day.

(10) The MI retained value is determined using the average MI value of incubated sample divided by the average MI value of as manufactured pipe sample.

PART 3 – EXECUTION

3.0.1. EXCAVATING TRENCH AND BACKFILLING

A. Excavate the trench in accordance with Section 02314 "Excavation, Backfill and Fill for Structural Facility and Utility Systems" unless specific trench excavation procedures are described in the Plans.

B. Carefully excavate the trench to such depths as required to permit the bedding material and the pipe to be placed in accordance with the details shown in the Plans.

3.0.2. LAYING PIPE

A. No pipe may be laid when water is above the spring line. The spring like being defined as the horizontal center line of pipe. The Contractor shall be responsible for all dewatering of trenches as required by the Engineer.

B. Each piece section of pipe shall be cleaned and inspected just before being lowered into the trench. Any section that has been damaged in handling, or is found to be defective to a degree which will materially affect the function and service of the pipe, shall be rejected for installation. Pipes having defects that have not caused their rejection are to be so laid that those defects will be in the upper half of the sewer. If any difficulty is found in fitting the pieces together, this fitting is to be done one the surface of the street before laying the pipe, and the tops plainly marked in the order in which they are to be laid. No pipe is to be trimmed or chipped to ft.

C. Each pipe shall be laid to the line and grade provided by the Engineer. All pipes shall be laid with bells or grooves uphill and tongue end fully entered into the hub. Each pipe is to be solidly and evenly bedded, and not simply wedged up before finishing each joint. Some suitable device is to be used to find that the inverts coincide. No length of pipe shall be laid until the two proceeding lengths have been thoroughly embedded in place, so as to prevent any movement or disturbance of the finish joint.

D. As the pipes are laid through the work, they must be thoroughly cleansed and protected from dirt and water, and no water will be allowed to flow in the trench in any case during construction. No walking on or working over the pipes after they are laid will be permitted, except as may be necessary to backfill and compact the soil to a depth of one-foot above the top of the pipe.

E. Whenever the pipe laying is discontinued, as at night, the unfinished end is to be securely protected from displacement by caving of the banks or from other injury, and a suitable stopper is to be inserted therein.

END OF SECTION

02630 OUTFALL HEADWALL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for precast concrete headwalls. The headwalls shall be constructed in accordance with FDOT specifications and Standard Details, and in conformity with the Plans.

1.0.2. PRECAST PRESTRESSED CONCRETE CONSTRUCTION

A. Fabricate, store, transport and erect precast/prestressed concrete members prestressed by the pretensioning method. Pretensioned precast prestressed concrete products are products prestressed by the pretensioning method. In this method, steel or fiber reinforced polymer (FRP) components are stressed and anchored; the concrete for the product is then cast and cured, and finally the stress in the steel or FRP components is released from the anchorages to the concrete through bond, after the concrete has attained its specified release strength.

B. A precast prestressed concrete plant, hereinafter called plant, is an independent operating facility capable of performing all the operations necessary to fabricate precast/prestressed concrete products.

1.0.3. QUALITY ASSURANCE

A. The Engineer will perform periodic inspections, sampling, and testing to ensure of the quality and acceptability of the materials, methods, techniques, procedures and processes being utilized in the fabrication of precast prestressed concrete products.

1.0.4. RELATED SECTIONS

Section 03400 - PRECAST PRESTRESSED CONCRETE

PART 2 – PRODUCTS

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

PART 3 – EXECUTION

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

END OF SECTION

02730 STORMWATER AREA DRAINS AND INLETS

PART 1 – GENERAL

1.0.5. SCOPE OF WORK

A. This section includes minimum construction requirements for precast catch basins or cast-in-place with type Class I concrete and reinforcing steel or brick masonry with the necessary metal frame and grate. The catch basins shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 350 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Brick Masonry: shall be either clay or shale brick meeting the requirements of ASTM C62 or concrete building brick meeting the requirements of ASTM C-55.

D. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

E. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). They shall be cast to the size and dimensions shown on Standard Detail SD-2.3 or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONTRUCTION

B. Catch basins shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-2.1.

C. Catch basins shall be located within the right-of-way as shown on Standard Detail SD2.4 or SD-2.5. The pavement around catch basins constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

B. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the catch basin.

C. Brick masonry in catch basins shall be build of brick and mortar of the specified quality. All brick shall be saturated with water before being laid. The brick shall be laid using the shovejoint method so as to bond them thoroughly into the mortar. Headers and stretchers shall be so arranged as to bond the mass thoroughly. A limited amount of halfbrick may be used not exceeding one-third (1/3) of the whole, if properly bonded with whole brick. Joints shall be finished properly as the work progresses and shall be not less than ¼-inch and not more than ½-inch in thickness. No spalls nor bats shall be used except for shaping around irregular openings or when unavoidable at corners. Only experienced bricklayers shall be employed on this work.

D. Brick catch basins shall have a plaster coat of mortar ½-inch in thickness on the inside and outside, mortar shall be as specified in sub-article 320.02 f.

E. When the catch basin is to be constructed of concrete, the forms shall be placed to the depth shown on the Plans or as directed by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 340.b. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

3.0.2. PRE-CAST CONSTRUCTION

A. The Contractor may, at his option, use precast catch basin constructed in accordance with Standard Detail SD-2.2.

3.0.3. PIPE PLACEMENT

A. Inlet and outlet pipe shall be of the same size and kind as the connecting pipe. They shall extend through the walls for a distance beyond the outside surface sufficient for the intended connections. The Concrete shall be placed around them neatly so as to prevent leakage along their outer surface. The inlet and outlet pipes shall extend three-inches inside the inner surface of the catch basin.

B. A ½-inch mesh galvanized screen with removable clamp as approved by the Engineer, shall be placed on the outlet pipe.

END OF SECTION

02721 STORMWATER CURBSIDE DRAINS AND INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for swale inlets or curb inlets with type Class I concrete, reinforcing steel and the necessary frame, grate or cover. The inlets shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 355 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete with minimum strength 3,000 psi.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

D. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for the swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

   All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION

A. Inlets shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-3.1 or SD-3.2.

B. When inlets are to be cast in place, the forms shall be set to the depth shown on the Plans or as indicated by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 227. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed, and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

C. Swale inlets to be constructed in a driveway or swale shall be located as required for catch basins (Standard Details SD-2.4 or SD 2.5).

D. The pavement around inlets constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

C. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the inlets.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision or construction of stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Miami-Dade County Public Works Manual and/or Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed or constructed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. FRAME AND GRATE

Miami-Dade County Public Works Sections 350 & 55 states the following:

A. The quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for catch basins and/or swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

B. All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coaltar pitch varnish.

2.0.2. GRATINGS, COVERS, AND FRAMES

FDOT Section 425 states the following:

A. Use gratings and frames fabricated from structural steel or cast iron as designated in the appropriate Standard Plans Index. When “Alt. G” grates are specified in the Plans, provide structural steel grates that are galvanized in accordance with the requirements of ASTM A-123 and hardware galvanized in accordance with the requirements of ASTM A-153.

B. Use rigid frames and covers either 24 inches or 36 inches or optional three-piece adjustable frames and covers as indicated in Standard Plans, Index 425-001.

C. For three-piece adjustable frames, the inner frame may include replaceable resilient seats to support the cover. In addition, the inner frame shall indicate it is adjustable, by clearly having the word “adjustable” imprinted into the exposed portion of the inner frame so “adjustable” is visible from the roadway after installation.

2.0.3. IRON CASTINGS

FDOT Section 962 states the following:

A. Gray Iron Castings

1. Provide gray iron castings that conform to the requirements of AASHTO M-105.

2. For frames, grates, rings, and covers for inlets, manholes, and other structures placed in areas of vehicular traffic, conform to the requirements of AASHTO M 306. Unless otherwise specified in the Contract Documents, provide gratings, manhole covers and frames to Class 35B and machinery parts to Class 30.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02730 STEEL GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision of steel stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. STEEL CASINGS

A. Carbon Steel Castings

1. Provide carbon steel castings that conform to the requirements of ASTM A27. Unless otherwise specified in the Contract Documents, all castings are to be Grade 65-35 or Grade 70-36.

B. Corrosion Resistant Steel Castings

1. Provide corrosion resistant Iron-Chromium or Iron-Chromium-Nickel castings that conform to the requirements of ASTM A743. Unless otherwise specified in the Contract Documents, all castings are to be Grade CA 15M.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02745 PAVEMENT REMOVAL AND REPLACEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work included under this Section covers the furnishing of all labor, equipment and material required for cutting, removing, protecting, constructing, replacing or stabilizing all existing roadways, driveways and pavements of the various types encountered, removed or damaged under this Contract.

B. In addition, all existing utility castings, including valves boxes, junction boxes, handholes, pull boxes, inlets and similar structures in the areas of trench restoration, pavement replacement and pavement overlay shall be adjusted by the Contractor to bring them flush with the surface of the finished work.

1.0.2. QUALITY CONTROL

A. The phrase “FDOT Specifications” shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The FDOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as through reproduced herein in their entirety.

1.0.3. DAMAGE BY CONTRACTOR

A. The Contractor shall be responsible for the protection from damage from his construction operations, all pavements, including all base courses and surface courses, within the work area.

B. Payment for pavement restoration will be made only where such base courses or surface courses are encountered within the limits defined in the pavement repair details shown on the Plans and/or in the City Standard Details at the rear of the Specifications.

C. Any base course or surface course beyond those limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these specifications, to the satisfaction of the City, and to the satisfaction of the governing authority having jurisdiction over the work area.

D. Any damage to adjacent lanes of pavement will require the Contractor to resurface the entire lane width for a length, as approved by the City. When the damage amounts to 25 percent or more in any one block (approximately 600 feet), the Contractor shall resurface the entire width of the lane in which the damage occurred for the entire block.

E. The Contractor is hereby notified that wherever the line for repaving for trenches extends one foot into the edge of the existing paving, he shall repave to this edge only. Full lane paving will not be required. Damage to the pavement beyond this line by the

Contractor will require that he repave the full width.

F. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

G. No payment shall be made for pavement restoration which falls outside the above described limits and is required for thrust blocks and other appurtenant items. The cost for such work shall be included in the price bid for the applicable item.

H. It is brought to the Contractor's attention that wherever the line of the nominal repaving for trenches extend to within two (2) feet of the edge of the existing paving, he shall repave to this edge.

PART 2 – PRODUCTS

2.0.1. MATERIALS – GENERAL

A. Lime rock Base shall be as specified in Section 02526 "Concrete Pavement, Curb and Walkways".

B. Asphaltic Pavement, Prime Coat and Tack Coat shall be as specified Section 02750 "Asphaltic Concrete Pavement".

C. Sand cover material shall be clean and non-plastic, and shall be composed of hard durable grains, free from loam, silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. Local sand meeting such requirements may be used. Sand shall be subject to approval by the City.

D. 1:10 Mix: Sand-cement mix for backfill within state roads shall be a 1:10 mix of Type I or II Portland Cement and Sand that shall produce a slump of 4 to 6 inches.

2.0.2. BITUMINOUS PAVING MATERIAL

Asphalt cement for asphaltic concrete mixes shall be Viscosity Grade AC-20 or AC-30, homogeneous, free from water and shall meet the requirements of FDOT Specifications, Section 916-1. Unless otherwise specified, all test samples required shall be supplied by the Contractor. For friction courses, in addition to meeting the above requirements, the bituminous material shall contain 0.5% of a heat-stable, anti-stripping additive from an approved source.

A. Asphaltic Concrete - Type S-I Mix shall meet the requirements of FDOT Specifications for Type S-I Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications.

B. Asphaltic Concrete - Type I Mix shall meet the requirements of Miami-Dade County Public Works Department Specifications for Type I Asphaltic Concrete Surface Course, Section 133 of the Public Works Manual.

C. Asphaltic Concrete - Type III Mix for asphaltic concrete wearing surface overlay, both machine laid and standard (skin patch), shall meet the requirements of FDOT Specifications for Type III Asphaltic Concrete, Section 333-1 through Section 333-6.

D. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs. See subsection 3.07, below.

E. Asphaltic Concrete - Type FC-1, FC-2, FC-3 and FC-4 shall meet the requirements of D.O.T Specifications for Friction Courses, Sections 337-1 through Section 337-7.

F. Emulsified Asphalt for Slurry Seal Coat shall be of the slow-setting, mixing type and shall be homogeneous, meeting the requirements of the Asphalt Institute, Grade SS-1 or SS-1h.

G. Liquid Asphalt for Prime and Tack Coat: See Section 02741.

H. Liquid Asphalt for Sand and Asphalt Paving shall be asphalt cement, viscosity Grade AC-5 or emulsified asphalt, Grade RS-2 (anionic) conforming to the requirements of FDOT Specifications, Section 916-1 and 916-4, respectively.

I. Mineral Aggregate for Slurry Seal Coat shall consist of screened sand or limestone screenings or gray granite screenings or a mixture of sand and screenings plus not less than 3%, by weight, of Type I or Type II Portland cement.

PART 3 – EXECUTION

3.0.1. INSTALLATION – GENERAL

A. Permanent pavement repair shall be in accordance with the details shown in the Standard Details herein, with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

B. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Public Works Department.

C. All equipment necessary for construction shall be on the job site in first class working condition. Spilling or dropping of petroleum products is prohibited and all defective equipment shall be removed or replaced immediately. The Contractor shall be subject to all DERM (Department of Environmental Resources Management) regulations and clean up requirements.

D. The percentages of maximum density for subgrade and lime rock base specified herein are minimum. Greater percentages of maximum density shall be obtained, if so required, by the governing authority having jurisdiction over the work location.

E. Asphaltic concrete mixtures shall be obtained only from plants which comply with the requirements of FDOT Specifications, Section 320 as applicable, using materials specified herein, and producing the specified mixture. General construction requirements for all hot bituminous mixtures specified herein shall conform to FDOT Specifications, Section 330, as applicable.

I. Asphaltic concrete shall be laid only where the surface to be covered is intact, firm, cured and dry, and only when weather conditions are suitable. The temperature of the mixture at the time of spreading shall be within 25°F of the temperature set by the Engineer. No mixture shall be spread when the air temperature is less than 40°F nor when the spreading cannot be finished and compacted during daylight hours.

F. Any mixture caught in transit by a sudden rain may be laid at the Contractor's risk, if the base is in suitable condition. Under no circumstances shall asphaltic material be placed while rain is falling, or when there is water on the area to be paved.

G. Subgrade: Roadway subgrades shall be stabilized to the minimum depth shown on the drawings to a Lime rock Bearing Ratio of not less than 40. Stabilizing shall be Type B as defined in Section 160 of the FDOT Specifications. Stabilization may require the addition and thorough mixing in of crushed lime rock, course lime rock screenings, or any other stabilizing material acceptable to the City. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subgrade will have a LBR of not less than 40. Stabilizing material shall be mixed or blended in the subgrade material by plowing, scarifying, disking, harrowing, blading and mixing with rotary tillers until the mixed materials are of uniform bearing value throughout the width and depth of the layer being processed.

H. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City.

I. Lime rock Base: The lime rock base shall be constructed in accordance with Sections 200 and 911 of the FDOT Specifications, to the thickness and width indicated on the drawings.

J. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 8-inches.

K. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98 percent maximum density as determined in more than one course, the density shall be obtained in each lift of the base.

L. During final compacting operations, if blading of any areas is necessary to obtain the

true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

M. Unless otherwise directed by the Engineer of Record, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

N. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by rescarifying, reshaping, adding base material where necessary and recompacting.

O. Mixing Base and Subgrade: If at any time the subgrade material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

P. Asphaltic Concrete: The spreading, compacting and jointing the wearing surface shall be in accordance with Sections 330 and 331 of the FDOT Specifications to the thickness indicated on the drawings.

3.0.2. TEMPORARY PAVING

A. Prior to commencing excavation, the asphalt surface shall be saw-cut within the limits of the allowable trench width. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902.3 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with his excavation work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City permitting the work to allow greater lengths than 1,200 feet. Permitting agencies may reduce the allowable limits in their permit, or for other unforeseen right-of-way conditions.

C. Prior to completion of the work and within a maximum of 30 calendar days, the Contractor shall remove the 1 inch of cold mix and surplus backfill. The Contractor shall replace it with the specified compacted lime rock base course and asphaltic within the specified working limits. Municipal agencies permitting this work may accelerate the time for removal of the cold mix, at their discretion.

D. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all work shall be completed in sections compatible with specified traffic maintenance procedures.

E. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement, to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed over properly compacted lime rock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of Type I paving restoration.

F. Sand seal on the lime rock base course will not be permitted in lieu of temporary paving.

G. Unless otherwise approved by the City, temporary paving, shall be placed within twenty-four hours following the completion of backfilling.

3.0.3. TYPE I PAVING REPAIR (LIMEROCK BASE - ASPHALTIC CONCRETE SURFACE)

A. Type I paving repairs shall be made with an 8-inch thick compacted lime rock base and a minimum 1-inch thick asphaltic concrete surface, as detailed in the Standard Details. On Public Works roads asphaltic concrete shall have a compacted thickness of 2-inch, placed in a minimum of two (2) compacted 1-inch lifts.

B. Limerock for pavement base shall be Miami limerock obtained from local sources where the overburden was removed from the pits prior to mining operations. The limerock shall comply with the requirements of FDOT Specifications, Section 911.

C. The backfill previously placed and compacted shall be excavated to the required depth below the existing road surface and the existing paving shall be cut back beyond all excavations, using an abrasive disc saw to trim the edges to straight and true lines, minimum width for the lime rock base shall be equal to the trench width plus 2 feet. Eight inches of lime rock base shall be placed in two layers, each layer compacted to not less than ninety-eight percent (98%) density in accordance with Section 200 of FDOT Specifications. During rolling, the base shall be wetted down, as necessary, to secure the greatest possible compaction. After rolling, the entire surface of the base shall be thoroughly scarified to a depth of not less than 3 inches and shaped to conform to and be parallel with the existing surface, then watered and rolled again. Rolling and watering shall continue until the entire depth of the base is bonded and compacted into an unyielding mass.

D. If at any time the subgrade material becomes mixed with the lime rock base course materials, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean rock which shall be watered and rolled until satisfactorily compacted.

E. After the lime rock base course has been properly prepared and is dry and ready to receive the wearing surface, a tack coat of emulsified asphalt, in accordance with

Section 02741, shall be applied at a rate of 0.10 gallon per square yard, immediately followed by the asphaltic concrete. The tack coat shall be applied to the entire lime rock base uniformly, and shall thoroughly coat all surfaced. Care shall be taken to tack coat and bond the edge of surrounding pavement.

F. The asphaltic concrete shall be plant mixed, using the best grade of local aggregates of approved size and gradation and mixed with an approved binder and conforming the either the State of Florida Department of Transportation Specifications, Type S-1 Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications, or Miami Dade County Public Works Type I, as ordered by the Engineer of Record.

G. Where the width of the repair permits, the asphaltic concrete plant mix material shall be placed by means of an approved mechanical spreader and finisher. The mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than eight tons. The compacted asphaltic concrete mixture shall not be, in any case, less than one inch in thickness. Rolling shall proceed as closely behind the spreader as possible and all material shall be completely compacted the same day it is placed. The minimum width of the wearing surface shall be the same as the base.

3.0.4. TYPE IV PAVING REPAIRS (CONCRETE SLAB – RIGID PAVEMENT)

A. Type IV repairs will be used when the restoration work falls within the limits of existing rigid pavement.

B. Paving repairs shall be similar to Type III paving repairs except that No. 4 reinforcing steel bars spaced 12 inches on centers both ways shall be substituted for the mesh reinforcement, and the slab shall be 8 inches thick instead of 6 inches, with the top of the concrete matching the elevation and finish of the existing pavement. The asphaltic concrete surface course is not required.

3.0.5. TYPE V PAVING REPAIRS (ASPHALTIC CONCRETE WEARING SURFACE OVERLAY)

A. Type V paving repairs shall be made where noted on the plans and/or as ordered by the Engineer or Record. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs, as specified hereinabove. As used herein, "overlay" shall mean Type V paving repairs. A special wearing surface may be substituted, if required.

B. In general, the overlay shall be applied in a full lane width or widths, after the permanent paving repairs over the trench have been made. Type V is usually in addition to required Type I repairs. Since the quantity of Type V repairs that may be required is usually unknown until pavement restoration work begins, Type V repairs may be established in the Proposal on a contingent basis.

C. All longitudinal and transverse asphalt replacement overlay wearing surfaces shall butt into adjacent existing asphalt wearing surfaces in full lane asphaltic pavement restoration. The finish elevation of the new full lane overlay shall meet existing elevations adjacent to the new work.

D. The existing asphaltic concrete surface shall be saw cut for its full depth or 1-inch minimum, and then stripped back for at least 2 feet into the area to be overlaid to a second cut which shall also be in clean straight lines. The second, or interior, cut edge shall be rolled with a tandem roller weighing not less than 8 tons before the overlay is applied. The stripped area shall be used to provide a smooth transition or "feather" area between the overlay and the existing pavement. Before placing the overlay, all cut edges and the surface of the stripped area shall be tack coated with emulsified asphalt as specified herein below.

E. If the Contractor requests in writing to "feather" the longitudinal edge, and if written permission is granted to "feather" the asphalt by the City a sanded mix of 70-30 type shall be used. "Feathering" shall begin 18 inches from the tapered edge.

F. Prior to installing a full lane width overlay over existing asphaltic pavement the trench and shoulders over the pipe shall be sawcut and filled with asphaltic concrete to the required depth, terminating flush with the existing adjacent asphalt in accordance with the municipality having jurisdiction over the work for Types I, II or M. Type V overlay will be installed as detailed above.

G. When a minor amount of asphalt surface will remain, generally with large pipe installations, after the pipe has been installed and the required longitudinal saw cutting of the asphaltic pavement completed, the Contractor may request permission to remove all the asphalt in the lane, by saw cutting the asphalt adjacent to the existing lane, then placing the Type V overlay flush with the adjacent asphalt. This would require that the Type I, II or M finish elevation be lowered 1 inch to allow for the Type V overlay.

H. Before the overlay is applied, existing surfaces shall be swept clean of all dirt and debris, using a power driven broom if warranted by the size of the location to be overlaid and/or as ordered by the City. Pavement edges shall be cleared of all encroaching vegetation, loose sand, rock and all other foreign matter. When the existing surface is thoroughly clean, a tack coat of Emulsified Asphalt Grade RS-2 (anionic) shall be applied at the rate of approximately 0.10 gallon per square yard, immediately followed by the asphaltic concrete overlay.

I. Machine-laid overlay shall be placed by means of an approved mechanical spreader and finisher, and the mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than 8 tons.

J. The compacted overlay shall be thicker as required to produce a smooth uniform surface free of any irregularities but shall not be less than one inch in thickness. Existing depressed areas in the asphaltic pavement, which could collect water after a rainfall shall be corrected before placing the asphaltic overlay. Rolling shall proceed as close behind the spreading of the asphaltic overlay as possible, and all materials shall be completely compacted the same day it is placed.

3.0.6. SLURRY SEAL COAT

A. Slurry-seal repairs shall be made where ordered by the Engineer of Record or the City.

B. Before any material is laid, the existing surface shall be cleaned with brooms or power blowers. Vegetation which has overgrown the edges shall be removed. All cracks, potholes and depressions shall be brought up to grade with bituminous concrete skin patching.

C. A tack coat, if required, shall consist of emulsified asphalt SS-1h, diluted with 3 parts of water, sprayed and squeegeed or broomed at a rate of 0.1 to 0.2 gallons per square yard.

D. A minimum thickness of 1/8-inch to a maximum of 1/4-inch of slurry mix shall be spread by a drag distributor at a maximum rate of 180 feet per minute. Any ridges or surplus material shall be smoothed by hand squeegee. The pavement shall be kept damp with a fog spray just ahead of the machine.

E. A second coat shall not be applied to, nor traffic permitted to drive upon, the first application until it has thoroughly dried. (A dry condition is such that an automobile tire track does not show after driving on the surface).

3.0.7. ASPHALT COLD MILLING

A. Cold milling of the existing pavement for a 1-inch depth shall be done by using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final

B. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above.

C. The required width of 1-inch thick asphaltic concrete wearing surface of the specified wearing course shall be applied in accordance with the above specifications.

D. The Contractor shall perform asphalt cold milling where called for on the plans or as required for a complete installation, when approved or requested by the City. Cold milling shall be done using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the City and governing agency having jurisdiction at the location of the pavement milling operation. All charges for maintenance of traffic, transportation of personnel, equipment and other mobilization charges shall be considered as incidental to the cold milling operation.

E. Cold asphalt milling shall be provided to improve the rideability of the finished pavement, lower the finished grade adjacent to an existing curb prior to resurfacing or to completely remove existing pavement. The overall length of the milling machine (excluding the conveyor) shall be a minimum of 18 feet, and having a minimum cutting width of six feet. The milling operation shall be operated to effectively minimize the amount of dust being emitted from the machine. Prewetting of the pavement may be required. In areas where milling is to be performed around the City utility structures such as manholes, valve boxes etc., proper caution shall be taken as not to damage any of the structures. Saw-cutting of the concrete surrounding the structure and using

a pick or other means so as not to disturb the structure shall be employed to prevent any damage. Prior to opening an area which has been milled to traffic, the pavement shall be thoroughly swept with a power broom or other approved equipment to remove to the greatest extent practicable, the fine material which will dust under traffic. This operation shall be conducted in a manner so as to minimize the potential for creating a traffic hazard and to minimize air pollution.

F. The milling operation shall be continuous so as to complete each site without any delays. All milling operations shall be coordinated by the City Inspector.

G. Traffic maintenance charges shall include the installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Dade County Public Works Manual. In addition, the Contractor shall provide all barricades, flashing warning lights and/or arrow boards necessary to maintain safety and warn motorists of the construction.

3.0.8. REPAIR OF DAMAGED PAVEMENT

A. All damage to pavement by the Contractor as a result of Work under this project shall comply with "DAMAGE BY CONTRACTOR", above, and shall be repaired in a manner satisfactory to the City. The repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

B. The width of all repairs within the work area shall extend at least 12 inches beyond the limit of the damage. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the work area shall be approved by the governing agencies having jurisdiction over the work prior to commencing the work.

3.0.9. CONCRETE PAVEMENT REPAIR

A. This type of repair shall be made only on Florida Department of Transportation roadways when the original pavement is concrete.

B. The existing pavement shall be saw cut in straight lines as outlined by the City at the location of the replacement. The pavement shall be removed and the fill shall be mechanically compacted to 98% of the maximum density obtainable as determined by AASHTO Standard T-180. The fill in the trench and shoulders shall be brought to a depth equal to the thickness of the existing concrete pavement, but not less than 8 inches in any case. The opening thus formed, shall be filled with concrete having a design strength of 5,000 psi and made with High Early Strength Cement. The concrete slab shall be reinforced with ½ inch steel reinforcing rods, 12 inches on center each way, placed 2 inches above the bottom of the slab. The surface of the slab shall be struck off with a screed and finished with a wood float and brush to conform to the grade and finish of the existing pavement. Apply liquid curing compound after initial set. The Contractor shall provide adequate means to protect the slab until it has cured sufficiently to withstand vehicular traffic without spalling or breaking apart. Construction joints and expansion joints in the original pavement shall be reproduced

in the repair with matching materials.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section consists of pavement markings and traffic signs on the Drawings, specified herein and as required for a complete installation.

1.0.2. QUALITY ASSURANCE

A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

B. Pavement markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced in kind to the satisfaction of the Dade County Department of Public Works, Traffic Engineering Division, or other authority having jurisdiction over the work area.

1.0.3. CERTIFICATION

The Contractor shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at his expense all signs that fail to meet this requirement.

PART 2 – PRODUCTS

2.0.1. PAVEMENT MARKING

Paint for pavement strips shall be as specified in Part 3, Execution

2.0.2. REFLECTIVE MARKERS

Reflective markers shall be installed in the pavement in accordance with OSHA, DOT and Dade County Public Works requirements.

2.0.3. TRAFFIC SIGNS

A. General: Traffic regulating signs shall conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices (ANSI) and displaying the lettering and symbols indicated on the Drawings.

B. Sign Panels and Support Members: Sign panels and support members shall conform to Aluminum Association Alloy 6061-T6.

C. Bolts: Bolts shall conform to Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002-inches thick minimum and chromate sealed.

D. Nuts: Nuts shall conform to Aluminum Association Alloy 6269-T9.

E. Reflective Sheeting: Reflective sheeting shall conform to DOT Type A requirements.

F. Construction Warning Signs: The CONTRACTOR shall install traffic and warning signs during construction in accordance with OSHA, DOT and Dade County Public Works requirements.

PART 3 – EXECUTION

3.0.1. TRAFFIC PAINT

A. This type of pavement painting shall be used where no thermoplastic paint is required or as temporary paint during the time required for paving "cure" prior to application of thermoplastic paint markings.

B. Traffic paint used for this work shall conform with the requirements of Section 971-12 of the Florida Department of Transportation Standard Specifications for Road and bridge Construction, or, at the Contractor's option, fast dry traffic paint, as specified in D.O.T. Specifications, Section 971-13, may be used.

C. The colors of the paint shall be yellow or white, as existed before the repair.

D. All equipment shall be of a type and design which will readily produce the required uniformity of application of the stripes, both as to thickness of coating and alignment. The paint machine shall be of the spray type, capable of spraying the paint to the required "spread" without thinning of the paint. The paint tank shall be equipped with a mechanical agitator. The nozzle shall have cut-off valves which will apply broken or "skip" lines automatically. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.

E. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset. No paint shall be applied when moisture is present on the surface to be painted or when the air temperature is below 40 degrees F. Painting shall not be done when winds are sufficient to cause spray dust.

F. The surface which is to be painted shall be cleaned by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or soil shall be removed from the pavement before edge striping is begun.

G. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint will be allowed at any time. Before the start of each day's work, the paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

H. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips. Any stripes which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.

I. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires. While the center line stripes are being painted, all traffic shall be routed away from the painting operations and the newly painted stripe. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.

J. Any portions of the stripes damaged by passing traffic or from other causes shall be repainted.

K. Paint for temporary pavement markings shall also be used where thermoplastic markings are to be applied after the asphaltic concrete has "cured." The cure time shall be based on thermoplastic manufacturer's recommendations. However, in accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

3.0.2. THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

A. Thermoplastic pavement markings, including stripes, pavement messages, stop bars, directional arrows, reflective pavement markers and other miscellaneous items, shall be replaced as existed before the repair was made. The thermoplastic compound shall be extruded or sprayed onto the pavement surface in a molten state by mechanical means, with surface application of glass spheres, when required. Upon cooling to ambient pavement temperature, the compound shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation.

B. The colors of the compound shall be white or yellow, as existed before the repair.

C. Where thermoplastic markings are to be applied to concrete pavement, a sealing primer, as specified in F.D.O.T. Specifications Section 711-2.2, shall be applied in advance of the placing of the stripes.

D. The thermoplastic shall be applied to the pavement utilizing either extrusion or spray application equipment. The application equipment shall be so constructed as to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die or gun shall be so constructed as to prevent accumulation and clogging. The equipment shall be

constructed so that all mixing and conveying parts up to and including the shaping die or gun, maintain the material at the plastic temperature with heat transfer oil or electrical element controlled heat. Direct fire heat transfer will not be allowed.

E. The application equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off square stripe ends and shall provide a method of applying "skip" lines. The use of pans, aprons, or similar appliances which the die overruns will not be permitted.

F. Glass spheres applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.

G. Special kettle(s) shall be provided for melting and heating the thermoplastic material. The kettle(s) shall be equipped with automatic thermostatic control devises to provide uniform temperature control and prevent overheating of the material. The applicator and kettle(s) shall be equipped and arranged as to satisfy the requirements of the National Fire Underwriters, the State of Florida, Dade County and any municipal authority applicable to where the work is being done.

H. Applicators shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The applicator equipment to be used on roadway installations shall consist of either hand equipment or truck mounted units depending on the type of marking required.

I. The hand applicator equipment shall be insulated, have sufficient capacity to hold 150 pounds of molten material, and be sufficiently maneuverable to install crosswalks; lane, edge and center lines; arrows and legends.

J. The truck mounted unit for lane, edge and center lines shall consist of a mobile selfcontained unit carrying its own material capable of operating at a minimum speed of five miles per hour while installing striping.

K. Application time, weather limitations and surface preparation shall be in accordance with F.D.O.T. Specifications Sections 710-4, 710-5 and 710-8. In accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

L. The material, when formed into traffic stripes or other markings, shall be readily renewable by placing an overlay of new material directly over an old line of compatible material in such a manner that no splitting or separation takes place.

M. The application temperature shall be within the range specified by the manufacturer of the thermoplastic compound being used.

N. All pavement edge lines, gore, island and diagonal strip markings, bike lane symbols and messages, wherever located, shall have a minimum thickness of 0.060 inch at the

edges and a maximum thickness of 0.120 inch at the center. A minimum average film thickness of 0.060 inch shall be maintained. All lane lines, center lines, transverse markings (except shoulder markings) and pavement markings within traffic wearing area (such as dotted turning guide lines) shall have a minimum thickness of 0.090 inch at the edges and a maximum thickness of 0.188 inch at the center. A minimum average film thickness of 0.090 shall be maintained. All thickness measurements shall be an average in any three foot length.

O. The glass sphere top coating shall be applied by a type of glass sphere dispenser or gun which will embed the spheres into the line surface to at least one-half their diameter. The glass sphere top coating shall not incur more than a 10 percent loss during the first 30 days of traffic exposure.

P. Reflective pavement markers shall be installed as they existed before the repair. They shall be replaced with the appropriate color or colors and oriented in the correct direction as specified in Section 706 of the F.D.O.T. Specifications. Paving markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, as revised by the governing agency.

3.0.3. FABRICATION

Preparation of sign blanks and fabrication of reflectorized faces shall conform to the applicable requirements of DOT Sections 700-4 and 700-5.

END OF SECTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Work included in this Section includes tree removal, tree relocations, furnishing and planting trees, plants and grass of the species, sizes and quality specified, fertilizing, watering, maintaining plants, guarantee and obtaining all permits from municipalities having jurisdiction over this work.

B. The schedule of trees and plants, if applicable, is shown on the drawing, and indicates the common and botanical names, the quantities and sizes of plants to be used.

C. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf with well developed root systems free of disease and insects, pests, eggs or larvae. No plants will be accepted unless healthy and showing satisfactory foliage conditions.

1.0.2. Solid sod and grass submittal to be submitted to the Engineer or Record for approval prior to installation.

PART 2 - PRODUCTS

2.0.1. GRASSING, SOLID SOD AND SEED:

A. General:

1. Solid sod shall be planted in the unpaved areas abutting the structures and extending to the limits shown on the Plans.

2. Grass seeding: All other unpaved areas shall be planted with grass seed and mulched.

3. When solid sod or grass seed is to be placed adjacent to or in close proximity to existing sod or grass, the Contractor is to use similar sod or grass and obtain approval from the Engineer of Record prior to installation. In public areas and right-of-ways the Contractor is also required to comply with Governmental Agency requirements and provide the City with written approval of said agency prior to installation of grass and sod.

B. Materials:

1. Solid Sod:

a. Solid sod shall be certified bitter blue St. Augustine Floratam. The sod shall be firm touch texture having a compact growth of grass with good root development. It shall contain no weeds or other objectionable vegetation.

b. The soil embedded in the sod shall be good clean earth, free from stones and other debris. The sod shall be free from fungus, vermin and other diseases. The sod and soil shall be approximately 2" thick.

c. Before being cut and lifted, the sod shall have been mowed at least three times with a lawn mower, with the final mowing not more than seven days before the sod is cut. The sod shall be cut into uniform dimensions approximately 12" X 24". Abutting joints shall be free of open spaces with a tamped or rolled surface so that there are no joint openings.

2. Topsoil: Soil utilized for planting grasses shall be a mixture of pulverized 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps or other impurities or debris. All soil shall be delivered in a loose friable condition. Topsoil may be "unsuitable top soil" removed during the course of other work hereunder, if approved by the Engineer of Record. Topsoil shall be free of undesirable plants and seeds. Any such plants sprouting from areas of recent topsoil application shall be presumed to have originated in the topsoil and shall be eradicated from the area by the Contractor at his expense. Means of eradication shall be submitted to the Engineer of Record for approval.

C. Planting of Grassing:

1. Solid Sod: Unless otherwise directed by the Engineer, four inches of topsoil shall be placed. The ground area shall be saturated with water. Sod shall be placed on the graded and watered ground firmly butted on all sides by sod without leaving holes, slots, or depressions. Sod shall be top dressed with soil (herein before specified) where required to bring all fill to voids and provide a uniform grass matt if approved by the Engineer of Record. Soil shall firmly abut all structures to which it surrounds or contacts. Immediately after the grassing process, the entire grassed or mulched area shall be rolled thoroughly with a cultipacker traffic approved roller, or other 1,000 pound roller. At least two trips over the entire area will be required.

2. Grass Seeding: As above, place four inches of topsoil and saturate with water. Thereafter seed and mulch

D. Fertilizing Grassing:

1. Commercial fertilizers shall comply with all Federal, State and County fertilizer laws.

2. The numeral designations for fertilizer indicate the minimum percentage (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water soluble potash, contained in the fertilizer.

3. Designations may be approved specifically for a particular project and if liquid fertilizer other than that of chemical designation 8-8-8 is used, the total nitrogen content shall not exceed 12 percent.

4. At the Contractor's option liquid or dry fertilizer may be used. All grass shall be fertilized and watered in during the planting operation using the application rate and method directed by the manufacturer of the fertilizer used.

E. Guarantee and Maintenance of Grassing:

1. Guarantee:

a. The Contractor shall guarantee all grasses for a period of six months from the date of acceptance of the completed overall project from the Contractor.

b. The Contractor shall guarantee the grasses shall be alive, free of disease and have a healthy appearance at the end of the guarantee period.

c. During the guarantee period, the Contractor shall replace any grass which is diseased, dead or visually unsightly within 3 days when requested in writing.

2. Maintenance:

a. The Contractor shall maintain all grass guaranteed above for the period of the guarantee. Such maintenance shall include filling, leveling, and repairing eroded areas, replanting areas where the establishment of the grass does not develop satisfactorily, and watering as required. In no case shall such maintenance be less than 3 weeks for watering and 6 weeks for remaining maintenance care.

b. The maintenance of the grass shall include, regular mowing, one application of approved dry or liquid fertilizer to the grasses guaranteed above. The fertilizer shall be applied and watered in as directed by the manufacturer. The time of fertilizing shall be approved.

c. The Contractor shall be required under the maintenance of the guaranteed grasses to safeguard and take all possible precautions against damage from the elements and other possible damage. The Contractor shall be required to clean up the effected landscape area during the maintenance period due to any such event. The Contractor shall not be responsible to replace grasses properly protected under this item of the specifications, damaged by the events beyond his control.

2.0.2. PLANTS AND TREES: (If required by relocation and if shown on the drawings)

A. Grade Standards and Quality:

1. Quality of all plants shall be at least equal to that defined as No. 1 by the State Plant Board of Florida in Grades and Standards for Nursery Plants, Part I, 1963 Revised Edition, and Part II, Palms and Trees.

2. All plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall have healthy, well developed root systems and shall be free of disease and insect pests, eggs or larvae.

3. No plants will be accepted unless they are healthy and show satisfactory foliage conditions.

4. All plants shall conform to the measurements specified or indicated on the Drawings except that up to 10 percent of undersized plants in any one variety or grade may be used provided there are sufficient oversized plants to make the average equal to or above specified grade. Plants larger than specified may be used if approved by the Engineer of Record, but use of such plants shall not increase the Contract price. The spread of roots or ball of earth for larger plants shall be increased in proportion to the size of the plant.

B. Plant Designation: With reference to method of cultivation, root system status, etc., plants for landscaping shall be classified under the following designations:

1. Balled and Burlapped:

a. Plants so classified shall be dug with firm natural root balls of earth, of sufficient diameter and depth to include most of the fibrous roots. The root ball of these plants shall be properly wrapped with burlap sack material and remain protected and moist until they are planted. Plants whose burlapped balls have cracked or become sagging, or plants showing scars from rope and cable marks or other improper handling are not acceptable. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet moss, or other acceptable material. The plants shall be set with the burlap cover intact and with the burlap showing, until inspection. At final inspection, the burlap may be cut away to ground level and completely covered with soil.

b. It is required that, balled and burlapped materials, 1½ inches or more in caliper, shall be root-pruned at least 45 days before being dug and such fact shall be certified on accompanying invoices. Where, in the opinion of the Engineer of Record following his inspection of the grower's stock, adequate root pruning is being obtained by the grower's general cultivating practices, he may consider such fact as meeting this requirement.

2. Wire Balled and Burlapped:

    a. Plants grown in soil of a loose texture which does not readily adhere to the root system shall have sound hog wire placed around the burlapped ball before the plant is removed from the excavation. The wire shall be looped and tensioned until the burlapped ball is substantially packaged so as to prevent loosening of the soil around the roots during handling.

    b. Wire balled and burlapped plants shall otherwise comply with the requirements for balled and burlapped plants described in 1 above.

3. Container Grown Plants:

    a. Container grown plants shall have been grown in a container large enough and for sufficient time for the root system to have developed well enough to hold its soil together firm and whole. No plants shall be loose in the container. Plants which have become pot bound or for which the top system is too large for the size of the container, will not be acceptable.

    b. All containers with vertical sides shall be cut and opened fully, in a manner such as will not damage the root system. Container grown plants shall not be removed from the container until immediately before planting, when all due care shall be taken to prevent damage to the root system.

4. Bare-Root Plants: No bare-root plants shall be used unless specifically required by the Engineer of Record or called for on the drawings.

5. Palms:

    a. Palm species shall have the roots adequately wrapped before transplanting except when they are container grown. Burlapping will not be required if the palm is carefully dug from marl or heavy soil that it adheres to the roots and retains its shape without crumbling. During transporting and after arrival, root balls of palm shall be carefully protected from the wind and exposure to the sun. After delivery to the job site, if palm is not planted within 24 hours, the root ball shall be covered with a moist material.

    b. All moving of sabal, coconut and royal palms shall be in accordance with Heavy Trunk Palms, as described in "Florida Grades and Standards for Nursery Plants, Part II".

6. Rooted Cuttings: Cuttings shall be kept moist at all times. They shall be rooted in a medium other than wood shavings and have at least 4 root tips of ½-inch or longer.

C. Transportation and Inspection:

1. Plant transportation shall comply with all Federal and State regulations therefor and, upon delivery at the site, all plants shall be inspected for conformity to specifications and for handling damage. Rejected plants shall be removed immediately from the site by the Contractor.

2. Foliage trees when moved in full leaf shall be treated with "Wilt Pruf" or "Plantguard", as they are loaded at their growing site. This material shall be applied to the entire tree with a fine spray at a dilution of 1 part "Wilt Pruf" or "Plantguard" to 15 parts of water.

3. Trees which have to be transported in excess of 10 miles to reach the job site, shall be covered with a 70 percent shade-cloth-tarp, or equal in order to prevent wind burn.

4. Immediately following the delivery and inspection at the job, all plants with exposed roots shall be heeled-in moist soil or peat moss. All plants heeled-in shall be properly maintained by the Contractor until planted.

5. The balls of balled and burlap plants, must, if not immediately planted after delivery and inspection, be adequately protected by covering until removed for planting, in a manner appropriate to prevailing conditions and in accordance with accepted horticultural practices. The Contractor shall, in loading, unloading, or handling of plants, exercise utmost care to prevent injuries to the branches or roots of the plants. The solidity of the ball of balled and burlapped plants shall be carefully preserved. Handling of the plant by parts other than the ball shall be cause for rejection of such plant. Bare root plants which have been heeled-in shall be properly handled during the distribution of planting beds.

D. Planting Materials:

1. Planting Soil: Planting soil shall be a pulverized mixture of 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps, or other impurities or debris. All soil shall be delivered in a loose friable condition.

2. Fertilizer:

   a. Fertilizer shall be as specified in subsection 2.01-D, herein.

   b. Fertilizer shall be selected and used as recommended by the manufacturer for each particular plant.

3. Mulch: Mulch shall be ground bark, bark peelings, peat, hay or straw. Cypress mulch shall not be used because its harvest degrades cypress wetlands.

4. Anti-Desiccant: Anti-desiccant shall be "Wilt Pruf", "Plantguard", or equal, delivered in the manufacturer's containers and used in accordance with the manufacturer's instructions.

5. Water:

   a. Water for the irrigation of the new plantings during the progress of construction shall be provided by the Contractor in accordance with the provisions previously specified.

   b. The Contractor shall furnish adequate watering equipment and shall continue watering to properly establish the new plantings throughout the maintenance period.

6. Wire: Wire for the bracing and guying shall be pliable No. 12 or No. 14 gauge galvanized soft steel wire.

7. Stakes and Ties: Stakes and ties shall be provided in accordance with the requirements of PART 3 EXECUTION, below.

PART 3 - EXECUTION

3.0.1. EXCAVATION OF PLANT HOLES:

A. Plant hole excavations shall be roughly cylindrical in shape, with the sides approximately vertical. Plants shall be centered in the hole, with the trunk location as shown in the Plans.

B. Bottoms of the holes shall be loosened at least 6-inches deeper than the required depth of excavation.

C. Holes for balled and burlapped and wire balled and burlapped plants shall be large enough to allow at least 8-inches of backfill around the earth ball. For root balls over 18-inches in diameter, this dimension shall be increased to 12-inches.

D. Where excess material has been excavated from the plant hole, the excavated material shall be disposed of as and where directed by the Engineer of Record.

E. PREPARATION OF GROUND

   1. Four inches minimum thickness of topsoil shall be placed over the areas off the right of way on which the sod is to be placed.

F. APPLICATION OF FERTILIZER

1. Before applying fertilizer, the soil pH shall be brought to a minimum range of 6.0 - 7.0.

2. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 500 pounds per acre, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4-inches.

3. On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2-inches.

G. PLACING SOD

1. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools. Sod areas abutting concrete, asphalt or other applicable surfaces shall have the soil depressed at edges of the pavements so that the cut grass does not protrude over 2-inches above the adjacent property.

2. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

3. On steep slopes, the Contractor shall, if so directed by the Engineer of Record, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.

4. Sod which has been cut for more than 72 hours shall not be used unless specifically authorized by the Engineer of Record after his inspection thereof. Sod which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

5. Sodding shall not be performed when weather and soil conditions are, in the Engineer of Record's opinion, unsuitable for proper results.

H. WATERING

1. The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer of Record, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod

roots and starts to grow for a minimum of 60 days (or until final acceptance whichever is latest).

3.0.2. UNDERGROUND OBSTRUCTIONS:

A. In the event that rock, underground construction work, utility lines or obstructions out of the ordinary are encountered in any plant hole excavation, alternative locations will be selected by the Engineer of Record.

B. Where locations cannot be changed and the obstructions may be removed, the obstructions shall be removed to a depth of not less than 3-feet below grade and not less than 6-inches below bottom of balls or roots when plant is properly set at the required grade.

3.0.3. SETTING OF PLANTS:

A. When lowered into the hole, the plant shall rest on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance. The Contractor, when setting plants in holes, shall make allowances for any anticipated settling of the plants.

B. The backfill shall be made with planting mixture as specified hereinbefore and shall be firmly rodded and watered-in, so that no air pockets remain. The quantity of water applied immediately upon planting shall be sufficient to thoroughly moisten all the backfilled earth. Plants shall be kept in a moistened condition for the duration of the Contract.

3.0.4. STAKING AND GUYING:

A. When called for on the Drawings or directed by the City, plants shall be staked in accordance with the following provisions:

1. Small Trees: For trees and shrubs of less than 1-inch caliper, the size of stakes and the method of tying shall be such as to rigidly support the staked plant against damage caused by wind action or other effects. Trees larger than 1-inch and smaller than 1½ inch caliper shall be staked with a 2-inch square stake driven at least 24-inches in the ground and extending to the crown of the plant. The plant shall be firmly fastened to the stake with two strands of 14 gauge soft wire, enclosed in rubber hose, or other approved covering. The wire shall then be nailed or stapled to the stake to prevent slippage.

2. Medium Trees: All trees, other than palm trees, larger than 1½-inch caliper and smaller than 2½-inch caliper shall be staked with two or more, 2-inch by 2-inch stakes, 8-feet long, set 2-feet in the ground. The tree shall be midway between the stakes and held firmly in place by two strands of 12 gauge wire, applied as specified above for single stakes. Tie wires shall be tightened and kept tight by twisting.

3. Large Trees: All trees, other palm trees, larger than 2½-inch caliper, shall be guyed from at least 3 points with double strands of 12 gauge wire. Guy wires shall be anchored to 2-inch by 4-inch stakes, 24-inches long, driven into the ground at least 2-feet and sufficient that the top of the stake is at least 3 inches below the finished ground level. In firm rock soils, No. 4 steel reinforcing rods or ½-inch pipe may be used instead of 2 by 4's. Tie wires shall be securely fastened to the tree by means of a collar of rubber hose, or other approved material. Guy wires shall be tightened and kept tight by twisting.

4. Palm Trees: Brace palm trees with three or more 2-inch by 4-inch wood braces, toenailed to cleats which are securely banded at two points to the palm, at a point at least 6-feet above the ground. The trunk shall be padded with five layers of burlap under the cleats. Braces shall be approximately equidistantly spaced and secured underground with 2-inch by 4-inch by 24-inch stake pads. In firm rocky soils, No. 4 steel reinforcing rods or ½-inch pipe is acceptable.

3.0.5. PRUNING:

All broken or damaged roots shall be cut off smoothly and the tops of all trees shall be pruned in a manner complying with standard horticultural practice. At the time pruning is completed, all remaining wood shall be alive. All cut surfaces of 1-inch or more in diameter, above the ground, shall be treated with an approved commercial tree paint.

3.0.6. MULCHING:

Within one week after the planting, mulch material, approved by the Engineer of Record, shall be uniformly applied to a minimum thickness of 2-inches, over the entire area of the backfilled hole or bed. The mulch shall be maintained continuously in place until the time of final inspection. Mulch is not required if other ground surface covers, such as rooted cuttings are called in the Plans.

3.0.7. INSPECTION:

On completion of the work, the Engineer of Record will inspect all planting work. The Contractor shall repair or replace all defective work, whichever is unsatisfactory to the Engineer of Record or the City. Preliminary acceptance of all plant materials will be given only after the materials are planted and after meeting all requirements prescribed herein.

3.0.8. MAINTENANCE:

A. Maintenance shall begin immediately after each plant is planted and shall continue until all work under this Contract has been completed and final acceptance is obtained from the City, however, the minimum period of this maintenance shall not be less than 60 days even if it extends beyond final acceptance of contract. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and

protected. Settled plants shall be reset to proper grade position, planting saucer restored and dead material removed. Guys shall be tightened and repaired.

B. Defective work shall be corrected as soon as possible after it becomes apparent. Upon completion of planting, the Contractor shall remove from the site excess soil and debris, and repair any damage to structures, etc., resulting from planting operations.

3.0.9. GUARANTEE:

The Contractor shall guarantee all planting work for a period of six months after the date of final acceptance. During the guarantee period, the Contractor shall replace at no cost to the City any plant that dies or is not established within the guarantee period. Any plants missing or defective shall be furnished or replaced in a manner satisfactory to the City.

END OF SECTION

DIVISION 3 – CONCRETE

03300 CAST-IN-PLACE CONCRETE, REINFORCING AND FORMWORK

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide all labor, materials, equipment, fabrication, incidentals, transportation, placing and supervision necessary to complete all cast-in-place concrete work, its finishing, and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation.

B. Work affecting this Section includes, but is not limited to:

1. Shop Drawings-Per General Conditions and as specified herein.
2. Materials and storage thereof.
3. Reinforcing-Bar and fabric.
4. Accessories of every nature, including form tie system.
5. Formwork and removal thereof, including shoring and reshoring.
6. Concrete proportions and mixes.
7. Placing of concrete.
8. Admixtures.
9. Joints, metal joint screeds and joint fillers.
10. Finishes of all types.
11. Protection and curing.
12. Patching.
13. Laboratory Testing.

1.0.2. QUALITY ASSURANCE

A. Unless otherwise indicated, all materials, workmanship and practices shall conform to the requirements of ACI 301-96 "Specifications for Structural Concrete for Buildings", except as modified by supplemental requirements hereinafter.

B. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

C. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

D. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

1.0.3. STANDARDS

A. ACI 301-96 Specifications for Structural Concrete.

B. ACI 318-95 Building Code Requirements for Reinforced Concrete.

C. Florida Building Code, latest edition.

D. ACI 117-90 Standard Specifications for Tolerances for Concrete Construction and Materials

PART 2 – PRODUCTS

2.0.1. GENERAL

C. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

D. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

2.0.2. CEMENT

G. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

H. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

I. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

J. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

K. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected.

2.0.3. FLY ASH

A. If fly ash is used as supplementary cementitious material, it shall meet the physical and chemical requirements of ASTM C618 Class F, except that the loss of ignition shall not exceed 4%. Sampling and testing of fly ash shall follow the requirements of ASTM C311.

B. For Type A1 concrete as required for use in environmental engineering concrete structures, inclusion of fly ash or slag cement in the concrete mix is mandatory

2.0.4. SLAG CEMENT

Q. Slag cement shall meet the requirements of ASTM C989 including tests for effectiveness of slag in preventing excessive expansion due to alkali-aggregate reactivity as described in Appendix X-3 of ASTM C989.

R. For Type A1 concrete as required for use in environmental concrete structures, i.e., process structures or fluid containing structures, inclusion of fly ash or slag cement in the concrete mix, is mandatory.

2.0.5. WATER

A. The water used in mixing the concrete shall be from potable water supplies that are approved by the Florida Department of Health.

2.0.6. AGGREGATES

A. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

B. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

C. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

D. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

E. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0.

F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

G. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.

2.0.7. ADMIXTURES

A. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

B. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

1. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

2. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured

and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are "Eucon 37" or Plastol 5000 by the Euclid Chemical Company, "Master Rheobuild 1000 or Master Glenium Series" by BASF, and "Daracem 100 or Advaflow Series" by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

3. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are "Accelguard 80/90 or NCA" by the Euclid Chemical Company and "Daraset" by W.R. Grace.

4. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

C. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

D. Portland cement and reinforcing steel: Comply with ACI 301 and, with all modifications and supplements thereto listed in Part 3 of this specifications.

2.0.8. CONCRETE MIX DESIGN

A. The proportions of cement, aggregates, admixtures, and water used in the concrete mixes shall be based on the results of field experience or preferably laboratory trial mixes in conformance with Section 5.3. "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318 and ACI 350. When trial mixes are used, they shall also conform to Article 3.01 of this Section of the Specifications. If field experience records are used, concrete strength results shall be from concrete mixed with all of the ingredients proposed for use on job used in similar proportions to mix proposed for use on job. Contractor shall submit verification confirming this stipulation has been followed. Field experience records and/or trial mix data used as the basis for the proposed concrete mix design shall be submitted to the City or their designee along with the proposed mix.

B. Structural concrete shall conform to the following requirements. Cementitious materials refer to the total combined weight of all cement, fly ash, and slag cement contained in the mix.

1. Compressive Strength (28 day)

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1	4,500 psi (minimum)
Concrete Class A2	4,000 psi (minimum)
Concrete Class B	3,000 psi (minimum)

2. Water/cementitious materials ratio, by weight

CONCRETE CLASS	MAXIMUM	MINIMUM
Concrete Class A1	0.42	0.39
Concrete Class A2	0.45	0.39
Concrete Class B	0.50	0.39

3. Slump Range

   a. 4" nominal unless high range water reducing admixture is used.

   b. 8” max if high range water reducing admixture is used

4. Air Content

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1, A2	6% ± 1.5%
Concrete Class B	3% Max (non air-entrained)

2.0.9. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Reinforcing of curbs and gutters shall be in accordance with City of Opa-Locka Public Works Manual Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways

2.0.10. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Curbs and gutters shall be in accordance with Miami Dade County or FDOT's Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways.

2.0.11. FORMS

A. Burlap mats: Conform to AASHTO Specification M182. (Burleen non-staining mats.)

B. Epoxy bonding agent: A two (2) component, solvent free, moisture insensitive structural epoxy adhesive conforming to ASTM C881 Type II, Sikadur 32 Hi-Mod, as manufactured by Sika Corp., Concresive 1090 Liquid by Master Builders or approved equal.

C. Anchor bolts, nuts and washers shall be American made 316 stainless steel.

D. Dovetail slots: Galvanized steel, 22 gauge, 1"x 1", with 5/8" throat, fiber filled.

E. Forms:

1. Plywood Forms: PS-1, B-B Concrete Form, Class I, exterior type, mill oiled and edge sealed. Thickness shall be as required to support concrete at the rate placed, but not less than 3/4".

2. Steel Forms: Uncoated steel, 3/16"-inch minimum thickness, fabricated to close tolerances, protected only by the specified release agent, braced so as not to dent, bend or dimple under wet concrete loads, vibrator impact and tool impact. Maintain steel forms in rust free condition by use of steel wool and light grinding, followed by coats of the specified release agent. Forms should be adjustable to be brought into true alignment without steps or ridges.

F. Form release agent:

1. For plywood forms use a natural non-petroleum base, non-staining and non-retarding release agent that will effectively prevent absorption of moisture and prevent bond with concrete and leaves the concrete with a paintable surface.

2. For steel forms, use an approved material that will not stain, color or otherwise affect the finish of the concrete. Form coating shall not be detectable on finished surfaces.

3. Round column forms: Provide seamless fiber forms with the three plies nearest to the interior surface of the form deckled or scarfed and overlapped to minimize spiral gaps or seams on the column surface.

G. Form Ties: Steel rod type with integral waterstops and cones, and with ends or end fasteners that can be removed without spalling the concrete and which leave a hole equal in depth to the required reinforcement clearance, but not less than 2 inches from the formed face of the concrete. Wire tie, banding wire and wood spreaders will not be permitted.

H. Form Inserts:

1. Bevel or chamfer strips: Wood or non-staining plastic, 3/4" wide on each leg at exposed edges of concrete members, unless otherwise noted on plans.

2. Tongue and Groove Joint Forms: Minimum 24 gauge with steel stakes and splice plates. Forms shall be designed for joints not to receive a poured seal.

3. Pipe hangers and other utility supports: AISI Type 316 stainless steel.

2.0.12. MORTAR

A. Standard premixed mortar conforming to ASTM C387, Type S, or proportion 1 part Portland cement to 2 parts clean, well-graded sand which will pass a 1/8-inch screen. Portland Cement shall conform ASTM C150.

B. Sand shall conform to AASHTO M45.

C. Admixtures may be used not exceeding the following percentages of weight of cement:

1. Hydrated lime: 10 percent

2. Diatomaceous earth or other inert materials: 5 percent.

D. Consistency of mortar shall be such that it will readily adhere to concrete

2.0.13. GROUT

A. Non-Shrink Grout: Non-shrink, non-metallic grout conforming to ASTM C 1107 Grade B or Grade C only. Grout must meet ASTM C 1107 at a temperature range of 50 F to 90 F at a flowable consistency. A minimum compressive strength of 5,000 pounds per square inch (psi) shall be obtained at 28 days.

B. Grout for Surface Repair and Bond Coat:

1. For repair, one part Portland cement to two parts fine sand, and a 50%of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent by Master Builders) to produce a stiff mortar.

2. For bond coat, one part Portland cement to one part sand, and a 50% of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent) to produce a slurry mix.

C. Moisture Barrier: Kraft paper and glass reinforcing fibers sandwiched between 2 layers of polyethylene film with a permeance rating of maximum 0.1 as per ASTM E-96, Procedure A.

D. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the non-extruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

Q. Joint Sealant Compound: Non-sag, 2 component, solvent free, moisture insensitive, flexible, epoxy resin conforming to the requirements ASTM C920-87 Type M, Grade NS. Additionally, the sealant must be recommended by the manufacturer to perform under continuous immersion in water.

R. Polyurethane Elastomeric Sealant: Sikaflex-2c, NS/SL or approved equal. Provide a 2- component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a non-sag and self-leveling consistency. Sealant shall meet ASTM C-920 and Federal Specifications TT-S-00227E.

1. Joint Movement: +50%.

S. Waterstops:

1. Polyvinyl chloride (PVC): Conforming to the requirements of U.S. Army Corps of Engineers Specification CRD-C-572 and of the following type:

a. Expansion Joints: 9-inches by 3/8-inch, ribbed center bulb.

b. Construction Joint: 9-inches by 3/8-inch, flat ribbed.

c. Only where specified on plans at construction and expansion joints: 9-inches by 3/8-inch, split ribbed.

2. Thermoplastic butt splices shall be performed using approved prefabricated pretested fittings; do not lap splice waterstops.

3. Waterstops for impermeable joints between prefabricated structures Non-hydro expansive based on bituminous resins to seal horizontal and vertical joints; hydrostatic load resistance 7 m column of water; not soluble in water; flashpoint 315degree Celsius ASTM D92; elongation capacity at 20 degree Celsius 230% compared to its initial dimension. Suitable for tunnels, water treatment plants, sewage, septic tanks, tanks, pipelines, sewer trunk lines and for any prefabricated concrete structure in general.

T. Fiber Reinforcement: Fiber reinforcement shall not be used in the concrete unless ordered buy the Engineer in writing. It shall consist of 100% virgin polypropylene fibrillated fiber dosage of 2 lbs. per cubic foot.

1. Compressive Strength: 1 psi (.006895 M Pa), ASTM C-39.

2. Flexural Strength: 288 psi (2.0 M Pa) after 7 days, 390 psi (2.7 M Pa) after 28 days; ASTM C-78.

3. Splitting Tensile Strength: 194 psi (1.3 M Pa) after 7 days, and 290 psi (2.0 M Pa) after 28 days; ASTM C-496.

4. Source: Fiber mesh Micro-Reinforcement System by Fiber mesh Company, Division of Synthetic Industries, Inc. Or approved equal.

U. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

V. A shrinkage reducing admixture (Teraguard) or equivalent at the rate of 2.2% by weight of cement may be used in the concrete to meet the shrinkage limitations.

W. To protect the concrete slab against the elements, the Engineer may direct the Contractor to spray an evaporation retarder on the finished concrete slab immediately behind the cement finishing process at no additional cost to the City. This is not a curing compound.

PART 3 – EXECUTION

3.0.1. READY MIX CONCRETE

A. Concrete obtained from a ready-mix plant shall conform to the requirements of these Specifications, and all applicable portions of ASTM C94 "Ready-Mixed Concrete".

3.0.2. MIXING AND DELIVERING CONCRETE

A. Produce a completely uniform mixed concrete in a truck mixer for 70 to 100 revolutions at the mixing speed designated by the truck manufacturer.

B. Prior to starting the discharge of the concrete at the jobsite, when water is added, record the added quantity and mix the concrete 30 additional drum mixing revolutions. Do not make more than two mix adjustments. Seek approval from the Engineer prior to using a central mixer and depositing the batch into a truck mixer.

C. Transit Time Using Agitator Trucks: The maximum allowable transit time between the initial introduction of water into the mix and completely discharging all the concrete from the truck will be 60 minutes. The maximum transit time can be 90 minutes if water reducing and retarding admixture (Type D, Type G, or Type II) is used. Reject concrete exceeding the maximum transit time.

D. All the concrete in a load must be in its final placement position a maximum of 15 minutes after the transit time has expired unless a time extension is approved by the Engineer.

E. Adding Water to Concrete at the Placement Site: Water may be added at the placement site provided the addition of water does not exceed the water to cementitious materials ratio as defined by the mix design. After adding water, perform a slump test to confirm the concrete is within the slump tolerance range stated in Section 2.01. If the slump is outside the tolerance range, reject the load. If an adjustment is made at the concrete production facility, perform a slump test on the next load to ensure the concrete is within the slump tolerance range. Do not place concrete represented by slump test results outside of the tolerance range. Include water missing from the water storage tanks upon arrival at the project site in the jobsite water added

3.0.3. PLACING CONCRETE

A. Weather Restrictions

1. Concreting in Cold Weather: Do not place concrete when the air temperature at placement is below 40ºF. The requirements of concreting in cold weather do not apply to precast concrete mixing and placement operations occurring in a temperature-controlled environment.

2. Concreting in Hot Weather: Hot weather concreting is defined as the production, placing, and curing of concrete when the concrete temperature at placing exceeds 85ºF but is less than 100ºF . Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85ºF at the time of placement. Concrete temperature shall be measured per ASTM C1064. Regardless of special measures taken, reject concrete exceeding 100ºF. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

B. Inspections Before Placing Concrete: Do not place concrete until the depth and character of the foundation and the adequacy of the forms and falsework have been

approved by the Engineer. Do not deposit any concrete until all reinforcement is in place and has been inspected and approved by the Engineer.

C. Exposure to Water: Do not expose concrete other than seal concrete in cofferdams to the action of water before final setting. Do not expose such concrete to the action of salt or brackish water for a period of seven days after placing the concrete. Protect the concrete during this period by keeping salt or brackish water pumped out of cofferdams.

D. Deposit concrete as nearly as possible in its final position. Do not deposit large quantities at one point and then run or work it along the forms. Take special care to fill each part of the forms, to work coarse aggregate back from the face, and to force concrete under and around reinforcing bars without displacing them.

E. Use a method and manner of placing concrete that avoids the possibility of segregation or separation of aggregates. If the Engineer determines that the quality of concrete as it reaches its final position is unsatisfactory, remove it and discontinue or adjust the method of placing until the Engineer determines that the quality of the concrete as placed is satisfactory.

F. Use metal or metal-lined open troughs, chutes, or other means of concrete conveyance which have no aluminum parts in contact with the concrete. As an exception, chutes made of aluminum for ready mixed concrete trucks, no longer than 20 feet, may be used. This exception does not apply to any other means of concrete conveyance. Where steep slopes are required, use chutes that are equipped with baffles or are in short lengths that reverse the direction of movement. Where placing operations would involve dropping the concrete freely more than 5 feet, deposit it through pipes, troughs, or chutes of sheet metal or other approved material. Use troughs, chutes, or pipes with a combined length of more than 30 feet only with the City''s authorization. Keep all troughs, chutes, and pipes clean and free from coatings of hardened concrete by thoroughly flushing them with water after each run or more often if necessary.

G. Place concrete against supporting material that is moist at the time of concrete placement. If additional water is required, uniformly apply it ahead of the concrete placement as directed by the Engineer. The Contractor may use a moisture barrier in lieu of controlling the foundation grade moisture when approved by the Engineer.

H. Place concrete in continuous horizontal layers, approximately 20 inches thick. To avoid obtaining a plane of separation or a cold joint between layers, vibrate the concrete.

I. Vibrate concrete to avoid honeycomb and voids, especially at construction joints, expansion joints, valleys, and ends of form sheets. Use approved pouring sequences.

J. Do not use calcium chloride or any other admixture containing chloride salts in the concrete.

K. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the Drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little re-handling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

L. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade, or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

M. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

N. Placing of concrete shall be so regulated that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.

O. All concrete for walls shall be placed through openings in the form spaced at frequent intervals or through tremies (heavy duct canvas, rubber, etc.), equipped with suitable hopper heads. Tremies shall be of variable lengths so the free fall shall not exceed five (5) feet and a sufficient number shall be placed in the form to ensure the concrete is kept level at all times.

P. When forms are removed, surfaces shall be even and dense, free from aggregate pockets or honeycomb. To achieve this, concrete shall be consolidated using mechanical vibration, supplemented by forking and spading by hand in the corners and angle of forms and along form surfaces while the concrete is plastic under the vibratory action. Consolidation shall conform to ACI 309.

Q. Care shall be taken to prevent cold joints when placing concrete in any portion of the work. The concrete placing rate shall be such as to ensure that each layer is placed while the previous layer is soft or plastic, so that the two layers can be made monolithic by penetration of the vibrators. Maximum thickness of concrete layers shall be 18 inches. The surface of the concrete shall be level whenever a run of concrete is stopped.

R. Placement in Wall Forms: Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of

canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing, and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in forms shall not exceed 5 feet of vertical rise per hour.

3.0.4. FORMWORK

A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The Contractor shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed and replaced at the Contractor 's expense. All design, construction, maintenance, preparation, and removal of forms shall be in accordance with the FBC, ACI 347 and the requirements specified herein.

B. All forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete.

C. Vertical Surfaces: All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for by the Engineer.

D. Construction Joints: Concrete construction joints will not be permitted at locations other than those shown or specified, except as may be acceptable to the Engineer. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete.

E. Form Ties: Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spilling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1 inch back from the formed face or faces of the concrete.

F. Careful procedures for the removal of forms shall be strictly followed, and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. Members which must support their own weight shall

not have their forms removed until they have attained at least 75 percent of the 28-day strength of the concrete as specified herein. Forms for all vertical walls and columns shall remain in place at least 2 days after the concrete has been placed. Forms for all parts of the Work not specifically mentioned herein shall remain in place for periods of time as determined by the City or their designee.

3.0.5. REINFORCING STEEL

A. Reinforcing steel shall be accurately formed to the dimensions and shapes shown on the Drawings, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings.

B. Bending or Straightening: Reinforcement shall not be straightened or rebent in a manner which will injure the material. Bars with kinks or bends not shown shall not be used. All bars shall be bent cold, unless otherwise permitted by the Engineer. No bars partially embedded in concrete shall be field-bent except as shown or specifically permitted by the Engineer.

C. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used, in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. All concrete blocks used to support reinforcing steel shall be tied to the steel with wire ties which are embedded in the blocks. For concrete over formwork, the Contractor shall furnish concrete, metal, plastic, or other acceptable bar chairs and spacers.

D. The portions of all accessories in contact with the formwork shall be made of concrete, plastic, or steel coated with a 1/8-inch minimum thickness of plastic which extends at least 1/2 inch from the concrete surface. Plastic shall be gray in color.

E. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

F. Bars additional to those shown which may be found necessary or desirable by the Contractor for the purpose of securing reinforcement in position shall be provided by the Contractor at its own expense.

G. Reinforcement placing tolerances shall be within the limits specified in ACI 318, unless otherwise directed by the Engineer.

H. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters having gray, plastic-coated standard type legs as specified herein. Slab bolsters shall be spaced not less than 30 inches on centers, shall extend continuously

across the entire width of the reinforcing mat, and shall support the reinforcing mat in the plane shown.

I. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3 feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into place in the freshly placed concrete shall not be used.

J. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the City or their designee.

K. Lap length for reinforcement bars shall be in a Class B Splice in accordance with ACI 318, unless otherwise shown. Laps of welded wire fabric shall be in accordance with the ACI 318.

L. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.

M. The surfaces of all reinforcing steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is a delay in depositing concrete, reinforcing shall be reinspected and, if necessary, recleaned.

3.0.6. PREPARATION OF SURFACES FOR CONCRETING

A. General: No concrete shall be placed until the reinforcement steel and formwork have been erected in a manner acceptable to the City or their designee. The Contractor shall notify the City or their designee not less than two working days prior to concrete placement, allowing for inspection and any corrective measures which are required. Earth surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the old concrete has been stopped or interrupted so that, as determined by the City or their designee, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bond. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by sandblasting, followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

C. Existing concrete surfaces upon or against which concrete is to be placed shall be given a roughened surface for good bond. Joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by Thydroblasting. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

D. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work, provided that construction joints shall be made only where acceptable to the City or their designee.

E. Embedded Items: No concrete shall be placed until all formwork, installation of parts to - be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the City or their designee at least 4 hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.

F. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the City or their designee before any concrete is placed. Accuracy of placement is the responsibility of the City or their designee.

G. Casting Against Old Concrete: Where concrete is to be cast against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro-blasting (exposing aggregate) prior to the application of an epoxy bonding agent. Application shall be according to the bonding agent manufacturer's instructions and recommendations.

H. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited under water nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete.

I. Openings for pipes, inserts for pipe hangers and brackets, and the setting of anchors shall, where practicable, be provided for during the placing of concrete.

J. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items, and any part of the concrete reinforcement will not be permitted.

K. Cleaning: The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.0.7. TAMPING AND VIBRATING

A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense homogeneous mass, filling all comers and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement. Vibrators shall be high speed power vibrators (8,000 or 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required.

B. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified with 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.0.8. FINISHING CONCRETE SURFACE

A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions shown on the Drawings are defined as tolerances and are specified herein. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.

B. Formed Surfaces: After removal of forms, the finishes described below shall be applied in accordance with Article 3.13, D. Unless the finish schedule specifies otherwise, all surfaces shall receive at least a Type I finish. The Engineer shall be the sole judge of acceptability of all concrete finish work.

1. Type I - Rough: All fins, burrs and other projections left by the forms shall be removed. All holes left by removal of ends of ties, and all other holes, depressions, or voids shall be filled solid with cement grout after first being thoroughly wetted. Honeycombs shall be chipped back to solid concrete as directed, prior to patching with cement grout. Holes shall be filled with a small tool that will permit packing the hole solidly with cement grout. Cement grout shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of cement grout shall match

the adjacent wall surface. At locations where concrete coatings are specified to be applied, epoxy-based patch material or filler surfaces compatible with the coating shall be used in lieu of cement grout specified herein. Concrete finish shall be in strict conformance to the coating / paint manufacturer's recommendations.

2. Type II - Grout Cleaned: Where this finish is required, it shall be applied after completion of Type I finish. After the concrete has been predampened, slurry consisting of one part cement (including an appropriate quantity of white cement in order to produce a color matching the surrounding concrete) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface with clean burlap pads or sponge rubber floats. Any surplus shall be removed by scraping and then rubbing with clean burlap. The finish shall be kept damp for at least 36 hours after application.

3. Type III - Smooth Rubbed: Where this finish is required, it shall be applied after the completion of the Type I finish. No rubbing shall be done before the concrete is thoroughly hardened and the mortar used for patching is firmly set. A smooth, uniform surface shall be obtained by wetting the surface and rubbing it with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities requires it, the general surface of the concrete shall not be cut into. Corners and edges shall be slightly rounded by the use of the carborundum stone. Brush finishing or painting with grout or neat cement will not be permitted.

C. Unformed Surfaces: The finishes described below shall be applied to unformed surfaces such as floors, slabs, flow channels and top of walls in accordance with Article 3.05 - Concrete Finish Schedule. The Engineer shall be the sole judge of acceptability of all such finish work.

1. Type "A" - Screeded: This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. When a Type "F" finish is subsequently to be applied, the surface of the screeded concrete shall be roughened with a concrete rake to ½" minimum deep grooves prior to final set.

2. Type "B" - Wood Floated: This finish shall be obtained after completion of a Type "A" finish by working a previously screeded surface with a wood float until the desired texture is reached. Floating shall begin when the water sheen has disappeared and when the concrete has sufficiently hardened so that a person's foot leaves only a slight imprint. If wet spots occur, water shall be removed with a squeegee. Care shall be taken to prevent the formation of laitance and excess water on the finished surface. The finished surface shall be true, even, and free from blemishes and other irregularities.

3. Type "C" - Cork Floated: This finish shall be similar to Type "B" but slightly smoother than that obtained with a wood float. It shall be obtained by power or band floating with cork floats.

4. Type "D" - Steel Troweled: This finish shall be obtained after completion of a Type "B" finish. When the concrete has hardened sufficiently to prevent excess fine material from working to the surface, the surface shall be compacted and smoothed with not less than two thorough and complete steel troweling operations. In areas, which are to receive a floor covering such as tile, resilient flooring, or carpeting, only one troweling operation is required. The finish shall be brought to a smooth, dense surface, free from defects and blemishes.

5. Type "E" - Broom or Belt: This finish shall provide the surface with a transverse scored texture by drawing a broom or burlap belt across the surface immediately after completion of a Type "B" finish.

6. Type "F" - Swept in Grout Topping: This finish shall be applied after a completion of a Type "A" finish. The concrete surface shall be properly cleaned, washed, and coated with a mixture of water and Portland Cement. Cement grout in accordance with Section 03315 shall then be plowed and swept into neat conformance with the blades or arms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention shall be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the Contractor shall notify the Engineer and the equipment manufacturer of the details of the operation and obtain approval and recommendations of the equipment manufacturer.

7. Type "G" - Hardened Finish: Either a liquid hardened finish or an aggregate hardened finish shall be provided at the Contractor's option.

8. Type "H" - Non-Slip Finish: This finish shall be provided by applying a non-slip shake-on aggregate concurrently with the application of a Type "D" finish. Application procedure shall be in accordance with manufacturer's instructions.

9. Type "J" - Raked Finish: This finish shall be provided by raking the surface as soon as the condition of the concrete permits by making depressions of +/-1/4-inch.

3.0.9. CONCRETE FINISH SCHEDULE

ITEM	TYPE OF FINISH
Inner face of walls of tanks, flow channels, wet wells, perimeter walls, and miscellaneous structures to be coated	I
Exterior concrete walls below grade	I
Exterior exposed concrete walls and columns (including top of wall) to one foot below grade. All other exposed concrete surfaces not specified elsewhere	II

All interior exposed concrete vertical surfaces in buildings	III
Interior exposed ceiling, including beams	III
Floors of process equipment tanks or basins, and slabs to receive roofing material or waterproof membranes	B
All interior finish floors of buildings and structures and walking surfaces which will be continuously or intermittently wet	C
All interior finish floors of buildings and structures which are not continuously or intermittently wet	D
Floors to receive tile, resilient flooring, or carpeting	D
Concrete in flow channels not specified to be coated	D
Exterior concrete sidewalks, steps, ramps, decks, slabs on grade and landings exposed to weather	E
Floors of process tanks indicated on Drawings or in the specifications to receive cement grout topping	F
Precast concrete form panels, hollow core planks, double tees	J

3.0.10. CURING AND DAMP PROOFING

A. All concrete shall be cured for not less than 14 days after placing, in accordance with the methods specified herein for the different parts of the work and described in detail in the following paragraphs.

SURFACE TO BE CURED OR DAMPPROOFED	METHOD
Unstripped forms	1
Construction joints between footings and walls, and between floor slab and columns	2
Encasement concrete and thrust blocks	3
All concrete surfaces not specifically provided elsewhere in this paragraph	4

B. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removed. If steel forms are used, the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 14 days of placing the concrete, curing shall be continued in accordance with Method 4.

C. Method 2: The surface shall be covered With burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.

D. Method 3: The surface shall be covered with moist earth not less than 4 hours, nor more than 24 hours, after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 days after placement of concrete.

E. Method 4: The surface shall be sprayed with a liquid curing compound. It shall be applied in accordance with the manufacturers printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film which will seal thoroughly.

F. Care shall be exercised to avoid damage to the seal during the curing period. Should the seal be damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.

G. Wherever curing compound may have been applied by mistake to faces against which concrete subsequently is to be placed and to which it is to adhere, said compound shall be entirely removed by hydroblasting just prior to the placing of new concrete.

H. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on uniformed surfaces, and within 2 hours after removal of forms from contact with formed surfaces. Repairs required to be made to formed surfaces shall be made within the said 2-hour period; provided, however, that any such repairs which cannot be made within the said 2-hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sand blasted to remove the curing compound, following which repairs shall be made as provided herein.

3.0.11. TESTING

A. Field Testing of Concrete

1. The Contractor shall coordinate with the Engineer's project representative the on-site scheduling of the materials testing consultant personnel as required for concrete testing.

2. Concrete for testing shall be supplied by the Contractor at no additional cost to the Owner, and the Contractor shall provide assistance to the materials testing consultant in obtaining samples. The Contractor shall dispose of and clean up all excess material.

B. Consistency

1. The consistency of the concrete will be checked by the materials testing consultant by standard slump cone tests. The Contractor shall make any necessary adjustments in the mix as the Engineer and/or the materials testing consultant may

direct and shall upon written order suspend all placing operations in the event the consistency does not meet the intent of the specifications. No payment shall be made for any delays, material, or labor costs due to such eventualities.

2. Slump tests shall be made in accordance with ASTM C143. Slump tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. Concrete with a specified nominal slump shall be placed having a slump within 1" (higher or lower) of the specified slump. Concrete with a specified maximum slump shall be placed having a slump less than the specified slump.

C. Unit Weight

1. Samples of freshly mixed concrete shall be tested for unit weight by the materials testing consultant in accordance with ASTM C138.

2. Unit weight tests will be performed as deemed necessary by the Engineer and each time compressive strength samples are taken.

D. Air Content

1. Samples of freshly mixed concrete will be tested for entrained air content by the materials testing consultant in accordance with ASTM C231.

2. Air content tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. In the event test results are outside the limits specified, additional testing shall occur. Admixture quantity adjustments shall be made immediately upon discovery of incorrect air entrainment.

E. Compressive Strength

1. Samples of freshly mixed concrete will be taken by the materials testing consultant and tested for compressive strength in accordance with ASTM C172, C31 and C39, except as modified herein.

2. In general, one sampling shall be taken for each placement, with a minimum of one (1) sampling for each day of concrete placement operations, or for each one fifty (50) cubic yards of concrete, or for each 5,000 square feet of surface area for slabs or walls, whichever is greater.

3. Each sampling shall consist of at least five (5) 6x12 cylinders or eight (8) 4x8 cylinders. Each cylinder shall be identified by a tag, which shall be hooked or wired to the side of the container. The materials testing consultant will fill out the required

information on the tag, and the Contractor shall satisfy himself that such information shown is correct.

4. The Contractor shall be required to furnish labor to the Owner for assisting in preparing test cylinders for testing. The Contractor shall provide approved curing boxes for storage of cylinders on site. The insulated curing box shall be of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished, and maintained by the Contractor. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by ASTM C31. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds and such that all specimens are shielded from direct sunlight and/or radiant heating sources. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours.

5. The Contractor shall be responsible for maintaining the temperatures of the curing box during the initial curing of test specimens with the temperature preserved between 60°F and 80°F as measured by a maximum-minimum thermometer. The Contractor shall maintain a written record of curing box temperatures for each day curing box contains test specimens. Temperature shall be recorded a minimum of three times a day with one recording at the start of the workday and one recording at the end of the workday.

6. When transported, the cylinders shall not be thrown, dropped, allowed to roll, or be damaged in any way.

7. Compression tests shall be performed in accordance with ASTM C39. For 6x12 cylinders, two test cylinders will be tested at seven days and two at 28 days. For 4x8 cylinders, three test cylinders will be tested at seven days, three at 28 days. The remaining cylinders will be held to verify test results, if needed.

F. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 214, ACI 318, and ACI 350.

2. The strength level of concrete will be considered satisfactory if all of the following conditions are satisfied.

   a. Every arithmetic average of any three consecutive strength tests equals or exceeds the minimum specified 28-day compressive strength for the mix (see Article 2.08). b. No individual compressive strength test results falls below the minimum specified strength by more than 500 psi.

3. In the event any of the conditions listed above are not met, the mix proportions shall be corrected for the next concrete placing operation.

4. In the event that condition 2B is not met, additional tests in accordance with Article 3.10, paragraph H shall be performed.

5. When a ratio between 7-day and 28-day strengths has been established by these tests, the 7-day strengths shall subsequently be taken as a preliminary indication of the 28-day strengths. Should the 7-day test strength from any sampling be more than 10% below the established minimum strength, the Contractor shall:

   a. Immediately provide additional periods of curing in the affected area from which the deficient test cylinders were taken.

   b. Maintain or add temporary structural support as required.

   c. Correct the mix for the next concrete placement operation, if required to remedy the situation.

6. All concrete which fails to meet the ACI requirements and these specifications is subject to removal and replacement at no additional cost to the Owner.

G. When non-compliant concrete is identified, test reports shall be sent immediately to the Engineer for review.

H. Additional Tests

1. When ordered by the Engineer, additional tests on in-place concrete shall be provided and paid for by the Contractor.

2. In the event the 28-day test cylinders fail to meet the minimum strength requirements as outlined in Article 3.10, paragraph F, the Contractor shall have concrete core specimens obtained and tested from the affected area immediately.

   a. Three cores shall be taken for each sample in which the strength requirements were not met.

   b. The drilled cores shall be obtained and tested in conformance with ASTM C42. The tests shall be conducted by a materials testing consultant approved by the Engineer.

   c. The location from which each core is taken shall be approved by the Engineer. Each core specimen shall be located, when possible, so its axis is perpendicular to the concrete surface and not near formed joints or obvious edges of a unit of deposit.

d. The core specimens shall be taken, if possible, so no reinforcing steel is within the confines of the core.

e. The diameter of core specimens should be at least 3 times the maximum nominal size of the coarse aggregate used in the concrete but must be at least 2-inches in diameter.

f. The length of specimen, when capped, shall be at least twice the diameter of the specimen.

g. The core specimens shall be taken to the laboratory and when transported, shall not be thrown, dropped, allowed to roll, or damaged in any way.

h. Two (2) copies of test results shall be mailed directly to the Engineer. The concrete in question will be considered acceptable if the average compressive strength of a minimum of three test core specimens taken from a given area equal or exceed 85% of the specified 28-day strength and if the lowest core strength is greater than 75% of the specified 28-day strength.

I. In the event that concrete placed by the Contractor is suspected of not having proper air content, the Contractor shall engage a materials testing consultant approved by the Engineer, to obtain and test samples for air content in accordance with ASTM Specification C457. D

END OF SECTION

03360 GROUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this Section consists of grouting the various items listed hereinafter and indicated on the drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

1.0.3. SUBMITTALS

A. Manufacturer's literature shall be submitted for review on the following items.

1. Nonshrink grout data shall include grout properties, mixing, surface preparation and installation instructions.

1.0.4. DELIVERY AND STORAGE

A. Grouting materials shall be delivered and stored in unbroken containers with seals and labels intact as packaged by the manufacturer.

1.0.5. QUALITY ASSURANCE

A. If the project includes patching, through bolt holes, epoxy anchors, and/or block outs, the manufacturer shall, if necessary, train the Contractor's employees in the mixing and curing of the epoxy grouts for each of these applications.

B. Furnish one year warranty. Manufacturer's warranty shall not contain a disclaimer limiting responsibility to the purchase price of products or materials.

PART 2 – PRODUCTS

3.0.1. MATERIALS

A. Cementitious grout shall be composed of one part of Type II Portland cement to three parts of sand.

B. Non-shrink Nonmetallic Grout shall be Five Star Special Grout 150, Five Star Products, Inc.; Grout F-100, Sauereisen Cement; Masterflow 713, BASF Building Systems; NS Grout, Euclid Chemical Company, pre-mixed type, or approved equal.

C. Non-shrink Metallic Grout: Master Builders Embeco 636 Plus Grout, BASF Building Systems, pre-mixed type, or approved equal.

D. Non-shrink Hydraulic Cement Grout shall be Waterplug, Thoro Products, BASF Building Systems, or approved equal.

E. Non-shrink shall be Five Star HP Epoxy Grout, Five Star Products, Inc., available from Coastal Construction Products, Inc. or Wall-Nu Trowelable, Steelcote Manufacturing Co., available from Florida Wire and Rigging Works, or approved equal.

F. Specifications for cement and sand for mortar and grout shall be the same as those for concrete.

3.0.2. EPOXY ANCHOR GROUT

A. Epoxy anchor grout shall conform to ASTM C 881 - Epoxy-Resin-Base Bonding Systems for Concrete, Type IV, Class A, B and C, Grade 3 with the exception of gel time.

B. Heat deflection temperature per ASTM D 648 -- Test Method for Deflection Temperature of Plastics Under Flexural Load shall be a minimum 120 degrees.

C. Manufacturer shall certify that the epoxy anchor grout will maintain 90 percent of its strength up to a temperature of 125 degrees F.

D. Grout shall come in a 2 chambered cartridge with a metering system that provides the proper ratio of hardener and resin. The grout shall also come with a static mixer nozzle to thoroughly mix the hardener and resin together.

E. Epoxy anchor grout shall be capable of being used in submersed applications once cured.

F. Compressive strength per ASTM D 695 - Test Method for Compressive Properties of Rigid Plastics shall be 10,000 psi minimum.

G. If the average working or operating temperature will be over 100 degrees F or in a high fire risk area, use cement based non-shrink grout and oversized holes.

H. Overhead anchors and anchors in fire-resistive construction shall be cast-in anchors.

I. Embedment of adhesive anchors/rebar shall be deep enough to develop the anchor/rebar. Embedment shall not exceed 67 percent of the member depth.

J. Epoxy anchor grout shall be SET-XP by Simpson Strong-Tie Co., Inc.; Powers PE1000+ by Powers Fasteners, Inc.; RE 500 SD by Hilti, Inc.; or approved equal.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. All bonding surfaces shall be clean and dust and oil free. Grout shall be mixed and applied in accordance with manufacturer's recommendations.

B. Grout Mix proportions (for grout to fill cores in reinforced masonry walls): 1. One part Portland cement, Type I or II. 2. 2-1/4 parts damp, loose sand. 3. Parts shot gravel (3/8" maximum). 4. Mix to conform to ASTM C476-83 with a minimum compressive strength of 2500 psi at 28 days, have an 8" minimum and 10" maximum slump.

C. Grout shall not be placed until base concrete or masonry has attained its design strength, unless authorized otherwise by the Engineer. Surfaces that will be in contact with grout shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete, and other deleterious materials.

D. Mechanical, electrical, and finish WORK shall be completed prior to placement of topping or concrete/grout fill. To ensure bonding to the base slab, the base slab shall be given an exposed aggregate finish. Alternatively where accepted by the Engineer, the base slab shall be given a roughened textured surface by a close-spaced rake while the surface is green. After curing, high pressure washing shall expose the aggregates and produce not less than a 3/16-inch amplitude roughness. Jackhammers or chipping hammers shall not be used.

3.0.2. INSTALLATION

A. Non shrink Grout:

1. Non shrink, nonmetallic grout shall be used for grouting precast concrete wall panel connections, column base plates, anchor bolts, reinforcing bars, pipe sleeves, and machinery supports.

2. Grout shall be mixed as close to the work area as possible and transported quickly to its final position in a manner which will not permit segregation of materials.

3. Non shrink grout shall be cured with water saturated burlap for at least three days or with an application of Super Rez Seal cure and seal compound applied immediately after grout placement.

4. Machinery set on grout pads shall not be operated until the grout has cured for at least 24 hours.

5. Expansive, non-shrink epoxy grout in the category of the DP Five Star Epoxy Grout shall be used for installation of vibrating machinery such as pumps.

B. Epoxy Adhesive Anchors: Grout shall be proportioned and mixed with automatic equipment. Unless otherwise indicated, embedment shall be sufficient to develop the

ultimate tensile strength of the anchor or reinforcing bar per the manufacturer's ICC-ES report but shall not be less than 8 diameters for threaded rod or 12 diameters for reinforcing or smooth bars. Holes shall be dry.

C. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, and cleaned. Drilled anchors shall not be installed until the concrete has reached the required 28 Day compressive strength. Anchors shall not be loaded until the grout has reached its indicated strength in accordance with the manufacturer's instructions.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work under this section includes the design, casting, delivery, erection and shoring of precast prestressed concrete structures as shown on the Contract Drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

B. Section 01340 “Shop Drawings”.

1.0.3. REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Without limiting the generality of other requirements of these specifications all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section:

1. South Florida Building Code, latest edition.

2. ACI 318, Building Code Requirements for Reinforced Concrete.

3. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

4. ASTM A416, Specification for Uncoated Seven-Wire Stress-Relieved Steel Strand for Prestressed Concrete.

1.0.4. QUALITY ASSURANCE

A. Fabricator shall be a recognized prestressed concrete manufacturer with minimum five (5) years’ experience in the manufacture and erection of similar units and whose design, fabrication and erection operations are supervised by a Florida Registered Professional Engineer.

1.0.5. CONTRACTOR SUBMITTALS

A. Shop Drawings: The Contractor shall submit shop and erection drawings for approval, showing concrete design strength; unit dimensions; unit weights; size, number, location and stress in prestressing strands; size, number and location of reinforcing bars including reinforcing for erection and handling stresses; concrete cover over

reinforcing and strands; bearing and anchorage details; concrete finish; curing method; erection marks; hoist points and shoring points.

B. Design Calculations: The Contractor shall submit for approval, neat, legible and complete design calculations prior to fabrication. Calculations shall be by a Florida Registered Professional Engineer whose seal shall appear on calculation sheets and shop drawings.

1. Calculations shall include predicted in-place cambers without superimposed loads, with superimposed dead loads and with superimposed dead loads and live loads.

2. Span length in calculations shall be from center of bearing to center of bearing.

3. Include bearing and anchorage details including those in the precast sections and those in the job cast concrete structure.

C. Certificates: The Contractor shall submit manufacturer's test certificates on prestressing strands and reinforcing.

D. Concrete Cylinder Tests: The Contractor shall submit copies of cylinder break reports by an approved commercial test laboratory, made from each casting for this project to verify that concrete has attained minimum ultimate prestressed transfer strength specified.

1.0.6. DEFINITIONS

A. In these specifications, where the terms "Precast Concrete" and "Precast Concrete Specialties" are used, they shall have equivalent meaning.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: Minimum 7 day ultimate compressive strength 4000 of psi. Higher strength will be permitted to suit manufacturer's design. In other respects, concrete shall comply with requirements of Section 03300 “Cast-in-Place Concrete, Reinforcing and Formwork”.

B. Prestressing Strands: High strength 7 wire strand conforming with ASTM A416-94. Elongation test conforming with ASTM A270-90 with minimum elongation at rupture of 3.5% in 24 inches. Tests need not be made if certification of conformance with specifications is provided by manufacturer. Use strand of U.S. manufacture.

C. Reinforcing Steel: ASTM A615, grade 60.

D. Forms: Provide smooth units true to size, shape and detail with flat panes, sharp lines and arises, free from warp, twist, bow or similar distortions, spalling, broken edges,

cracks or similar defects. Dimensional tolerances to be as provided in ACI 525 Standards Minimum Requirements for Thin Section Precast Concrete Construction.

2.0.2. FABRICATION

A. General: Fabricate units accordance with approved shop drawings and approved design calculations

B. Unit design and fabrication: Conform with ACI Standard Building Code Requirements for Reinforced Concrete and the Prestressed Concrete Institute Standards. Fabricator shall design joists and beams in accordance with loads indicated on drawings. Camber under dead load or deflection under total load shall not exceed 1/360 of span.

C. Inserts: Install hanger inserts and sleeves in unit forms for mechanical and electrical items as provided under other sections and as shown on drawings.

D. Curing: Top surface to receive water curing only.

E. Marking: Distinctively mark each unit with manufacturer's name and mark indicated on erection drawings.

F. Age: Units shall be minimum 10 days old before shipping or erection.

2.0.3. PREFORMED JOINT SEALANT

A. The joint sealing compound shall be Quik-Seal, a preformed, cold applied, ready to use plastic joint sealing compound as supplied by Quikset Utility Vaults, Santa Ana, California; Ram-Nick by K.T. Snyder Company; or approved equal.

2.0.4. MORTAR

A. Mortar used between the sections of precast concrete vaults shall be as recommended by the manufacturer.

2.0.5. NON-SHRINK GROUT

A. Non-shrink grout shall be as specified in the Section 03360 "Grout".

2.0.6. QUALITY CONTROL

A. Precast concrete units shall be made by an experienced manufacturer and shall be constructed as shown on the drawings and specified herein and shall be free of defects, checks and cracks. Care shall be taken in the mixing of materials, casting, curing and shipping to avoid any of the above.

B. The Contractor shall notify the City a minimum of 5 days before the units are cast and 5 days before shipment is made, in order to provide for plant inspection, if the City so directs.

PART 3 – EXECUTION

3.0.1. ERECTION

A. Erection to be by manufacturer and supervised by manufacturer's Florida Registered Professional Engineer or authorized representative. Handle and install units with precision, in conformance with drawings, details and erection drawings.

3.0.2. INSTALLATION

A. Required pads, plates and reinforcing bars shall be furnished for casting and anchorage in the adjoining work. The precast concrete units shall be installed in a workmanlike manner with the units tight and at right angles to the supporting beams or walls. The units shall be aligned and leveled in accordance with the procedures recommended by the manufacturer. Units shall be grouted by a mixture of not less than one part cement to three parts fine sand, care being taken to see that joints are filled. Damp grout that may have seeped through shall be removed before it hardens.

B. All openings in the precast units shall be made by the Contractor and are the responsibility of the Contractor. Where details for an opening are not shown on the drawings, the opening shall be made in accordance with the recommendation of the manufacturer. When an opening causes a loss in carrying capacity of the unit, the adjacent units shall be designed to carry the additional dead and superimposed load transferred from the unit with the opening. The Contractor shall provide saddle headers as required.

C. Extreme care shall be used to avoid damaging or soiling concrete as no repairing or cutting will be permitted. Damaged units shall be replaced at the expense of the Contractor. Wooden hammers shall be used, with pinch bars being used on unexposed parts only.

3.0.3. CLEANING AND REPAIRS

A. Cleaning: Clean exposed surfaces of units of stains to a uniform appearance. Do not use caustic or acid cleaners.

B. Repairs: Repair nicks or chips in exposed areas.

END OF SECTION

DIVISION 5 – METALS

05520 ALUMINUM RAILING

PART 1 - GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall design, furnish, fabricate, and install aluminum railing and appurtenances as indicated on the Drawings, complete, all in accordance with the requirements of this section.

1.0.2. QUALITY ASSURANCE

Standards: Unless otherwise specified, all materials, workmanship and practices shall conform to the following Standards:

A. South Florida Building Code, latest edition.

B. Aluminum Construction Manual, latest edition, by the Aluminum Association.

C. Applicable OSHA requirements

D. Rail and fittings shall be clear anodized, as specified below. Railing shall be plastic wrapped for protection. Wrap shall be removed only after erection.

1.0.3. SUBMITTALS

A. The Contractor shall submit to the Engineer of Record detailed shop drawings, prior to fabrication, for review and approval. The drawings shall be complete, covering all aluminum railing members, fastenings, connections, means of galvanic protection, etc., which for part of a finished structure.

B. Where written certification are called for below, it shall be submitted to the Engineer of Record.

PART 2 – PRODUCTS

2.0.1. ACCEPTABLE MANUFACTURING

A. Wesrail: Moultrie Manufacturing Co.

B. Thompson Railing Systems: Thompson Fabricating Co.

C. Approved equals.

2.0.2. ALUMINUM RAILING SYSTEM

A. General: Where indicated on the Drawings, pipe handrailing shall be provided. Pipe handrailing shall be supplied as required by the South Florida Building Code and OSHA whether indicated on the Drawings or not, including stair railings.

B. Prior to fabrication, verify all dimensions by actual measurement, so that the finished ladder will fit accurately and provide a neat appearance, with no part out of line and grade by more than 1/8 inch.

C. Handrailing system, including rails, stanchions and attachments, shall be designed and constructed to resist a load of not less than 200 pounds applied in any direction and at any point on the rails.

D. The handrailing shall be of welded construction design, with field splices where required between sections. All exposed welds shall be continuous fillets, watertight, and ground smooth. Bends, warps and ramps in the rails shall be made by bending the pipe to true and even curves, without kinks.

E. Vertical pipe supports to be set in concrete shall be set in built-in pipe sleeves, or concrete may be cored, minimum 5-inches in length. Removable posts shall be sleeved. The joint between upright and sleeve shall be cemented with epoxy grout.

F. Wall brackets for handrail shall be as manufactured by Mouitrie Manufacturing Company, J.G. Braun Company, Fulton Metal Products Company, or equal. Wall brackets shall be fabricated of metal compatible with handrail metal. End all wall mounted railings at the line of the first nosing.

G. Provide chain gates across all openings in railings. Chain shall be welded, stainless steel, close link hoisting chain, 1/4-inch by 1-5/16 inch links. One end of each chain gate shall be attached by a stainless steel shackle to a 1/4-inch round stainless steel stock eye bolted to the pipe stanchion and the other end connected to a heavy stainless steel snap hook. A 1/4-inch stainless steel eye shall be provided in the opposite stanchion or concrete wall, installed at the height of the center lines of the top rail.

H. Aluminum Railing: Stanchions and rails shall be nominal 2 inch diameter minimum, Schedule 80 aluminum alloy 6061-T6 with clear anodized finish. Railing posts must be adequately reinforced to meet the specified design loads. Handrailing shall be 42 inches in height. In no case shall the spacing of handrail posts exceed five (5) feet on center. Stainless steel railings may be used in lieu of aluminum railing at the CONTRACTOR's option.

I. Kickplates: Kickplates where not specifically called for in the Drawings shall be furnished and installed typically at the edges of all metal walkways and at other handrail installations. Kickplates shall be l/4-inch thick, must meet OSHA requirements, shall project 4-inches above walkway surface, may not infringe on minimum required walkway width and material must be the same as that of handrail construction. Kickplates shall be connected to handrail posts as detailed on the drawings.

2.0.3. FINISHES

A. Finish shall be natural anodized after forming, and before assembly. Each piece of aluminum to be anodized shall be finished (anodized) in accordance with the following Aluminum Association Designations:

1. Sheet: AA-M10C11c21A31, with minimum 0.4 mil coating

2. Structural shapes, plates, bars and pipe: AA-M10C11C21A41, with minimum 0.8 mil coating.

B. All fabricated aluminum items of the railing shall be anodized after fabrication. No touch-up paint will be accepted.

C. A written certification stating compliance with the aluminum finish (anodizing) as specified above shall be furnished for all aluminum material and/or items furnished and installed by the Contractor.

D. Protect all aluminum by a factory applied coating of water-tight clear methacrylate lacquer having a minimum thickness of 0.008"minimum capable of withstanding the action of lime and mortar for a period of at least one week in an atmosphere of 100% relative humidity at 100ºF.; the action of 10% by weight muriatic acid for a period of six hours at 70ºF.; and the action of the atmospheric weather for a period of 12 months. The coating shall be sprayed on, after anodizing and sealing procedures have been followed. Submit written certification indicating that the coating meets or exceeds the requirements of the Aluminum Association Mortar Test for Clear Lacquers on Anodized Aluminum.

2.0.4. EXPANSION BOLTS

A. Stainless steel type 316 wedge bolts furnished by handrail manufacturer.

PART 3 -- EXECUTION

3.0.1. EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.0.2. PREPARATION

A. Clean and strip primed items to bare metals where site welding is required.

B. Supply items required to be cast into concrete with setting templates, to appropriate sections.

3.0.3. FABRICATION

A. Fabricate railings in shop, made and erected square, plumb, straight and true, designed for adjustment to field variations, accurately fitted with tight joints and intersections.

3.0.4. INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors and plates required for connecting railings to structure.

C. Aluminum Railings: Aluminum railing fabrication shall be performed by craftsmen experienced in the fabrication of architectural metal work. Exposed surfaces shall be free from defects or other surface blemishes. Dimensions and conditions shall be verified in the field. All joints, junctions, miters and butting sections shall be precision fitted with no gaps occurring between sections, and with all surfaces flush and aligned. Electrolysis protection of materials shall be provided.

D. After satisfactory installation, all coating shall be removed leaving the clean undamaged surface. In locations where aluminum may come in contact with dissimilar metals or masonry, the surfaces shall be given a heavy brush coat of alkali-resistant bituminous paint or separated with a non-absorptive tape or gasket.

3.0.5. EXPANSION BOLTS

A. Expansion bolts shall be spaced 10d apart and 5d edge distance for no reduction in pull out strength. A safety factor of four shall be provided on expansion bolt pull out values published by the manufacturer.

3.0.6. ALUMINUM SURFACES

A. Aluminum surfaces in contact with concrete, grout (except epoxy grout), dissimilar metals (except stainless steel), or buried in the ground shall be protected with a heavy coat of Bitumastic No. 300, as manufactured by Kop-Coat, Inc., or approved equal.

END OF SECTION

05550 CASTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section specifies castings for use in this project, including water and force main valve boxes and covers. It also establishes casting requirements, including tolerances, on all castings to be furnished and installed under this project.

1.0.2. REFERENCES

A. Materials used in the manufacture of the castings shall conform to ASTM A48 "Gray Iron Castings," for Class 30B iron. Castings shall be non-rocking. Manhole and valve box covers shall have a roadway type surface and machined mating surface.

B. Proof Loading: AASHTO M306 Loading.

1.0.3. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing of products specified in this section with minimum five years documented experience. Non-domestic castings shall conform with all marking and other requirements contained in federal and state statutes.

PART 2 – PRODUCTS

2.0.1. GENERAL

A. Shop drawings shall be furnished for all castings supplied and said drawings shall include certified dimensions and weights of all components. Dimensions shall conform with City Standard Detail requirements.

B. Finish casting dimensions shall be held to the following tolerances: Up to 4 inches, ±1/32 inch; 4 to 8 inches, ±3/64 inch; 8 to 12 inches, ±1/16 inch; 12 to 24 inches ±1/8 inch; above 24 inches, add the appropriate (minimum) value from those given above to ±1/8 inch. Note that this shall not affect the requirement that mating surfaces shall be machined and shall bear for their full length. Components shall be interchangeable with new and existing units without exceeding the tolerance add up specified above.

C. Weight of castings supplied shall not vary more than ±5 percent from the certified weight supplied by the Contractor as a part of his shop drawings.

D. The foundry's name (and if not domestically produced, foundry's name and country) shall be cast in the bottom of each lid. Body and lid or frame and cover shall be manufactured by the same foundry. Manufacture of the various components comprising one set, such as for example; a valve box and lid, by different manufacturers is expressly forbidden.

E. Note that name cast into the bottom of the lid shall be the name of the actual foundry doing the casting. Name of an importing, purchasing or fabricating (from components) firm will not be acceptable. Methods of attaching this information other than casting are not acceptable.

F. With the shop drawings of each component, submit the name, address and county of the foundry producing the component. Further, this foundry shall not be changed during the course of the Contract without written previous notification of and written permission from the City Engineer, Engineering Division, Opa-Locka Public Works Department.

G. Each shipment of castings provided by the Contractor shall be accompanied by a certification specifically stating that the materials of that shipment comply with all requirements of this Specification, specifically including dimensions and tolerances, materials of manufacture, weights of components, marking and foundry of origin. This certification shall be signed, dated and sealed by a registered professional engineer licensed to practice in the state where the materials are cast or if not of domestic manufacture in the state where the supplying firm is located.

H. Contractor's should be aware that it is the intent of the City to periodically check materials supplied for conformance to these specifications to include materials testing, dimensions and tolerances, component weights, marking, finish and fit, and such other matters as are necessary to assure supply of products meeting our requirements. Random testing of materials supplied will be at City expense if passed. Any retesting due to material not passing tests will be at the supplier's expense.

2.0.2. CASTINGS AND MATERIAL – GENERAL

A. General materials used in the manufacture of the castings shall conform to ASTM Standard A48, "Gray Iron Castings", latest edition, for Class 30B iron. Valve box covers shall have a roadway type surface, machined mating surface and shall be non-rocking.

B. Castings shall be furnished unpainted with shotblasted finish.

C. Castings shall be as manufactured by U.S. Foundry 7630 ring and FD cover, or approved equal.

D. Valve boxes and valve box covers:

1. For Water Facilities:

a. Cast iron boxes shall be extension type with slide-type adjustment and flared base. The minimum thickness of metal shall be 3/16 inch. The word “W" shall be in the cover. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location. Boxes to be No. 3 for 6” and larger lines.

2. For Sewer Facilities:

a. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

b. The letter “S” shall be cast in the cover for sewer force mains.

c. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

d. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

e. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

f. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

g. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL INSTALLATION

A. Castings with cracks or other defects, shall not be installed in the work.

B. The use of sloped asphaltic concrete ramp rings will not be permitted.

C. The Contractor shall provide all barricades, signs and flashing warning lights necessary to warn pedestrians and motorists of the construction along the entire route of the project.

D. Frames and covers or valve boxes and covers shall be set accurately to grade to conform to the finished grade of the adjacent areas.

E. Castings level without tipping, to correct elevations.

F. It shall be the Contractor's responsibility to assure that castings are set to match existing and/or proposed finish paving grades.

END OF SECTION

DIVISION 10 – SPECIALTY CONSTRUCTION

10001 STORMSAFE VAULT TREATMENT STRUCTURE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

J. The Contractor shall furnish and install StormSafe Model SSV40-2-000 structure, inner components and filter cartridges as shown on the Drawings, and as specified herein.

K. This section includes minimum construction requirements for the StormSafe Vault installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

L. Manufacturer: FABCO Industries Inc.

1.0.2. RELATED SECTIONS

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. Cover/slab: 26,100 lb (13 tons)

B. Base w/ filters: 83,500 lb (42 tons)

2.0.2. MATERIALS MEET OR EXCEEDS REQUIREMENTS

A. Vault:
- Reinforcement steel: rebar, ASTM A-615 grade 602.
- Cement: ASTM C-150 specifications,
- Concrete 28 day compressive strength shall be 5000 psi (min)

B. Access manholes: ASTM A-48, class 35B gray iron or ASTM A536, grade 80-55-06 ductile iron.

2.0.3. PERFORMANCE CHARACTERISTICS (W/ FABCO HYDROCARBON CARTRIDGE)

A. Maximum cartridge capacity = 40
B. Maximum treatment capacity = 10.0 cfs (4,500 gpm)
C. Bypass capacity 24.0 cfs (10,800 gpm)

PART 3 – EXECUTION

3.0.7. INTALLATION OFF-LOADING, SETTING, EXCAVATION, DEWATERING, DRAINAGE, AND BACK FILL OPERATIONS

Shall be performed in accordance manufacturer requirements local regulations and are the responsibility of the contractor. Sub-base and backfill depth are site specific and shall be specified in the technical specifications or by the engineer of record.

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3.0.8. GENERAL INSTALLATION

A. The contractor shall verify That the unit is vertically and horizontally plumb and stable, with minimum voids and minimum un-compacted soil after back fill operation.

B. Connect and seal drain lines to the StormSafe inlet and outlet ports and, if necessary, grout with approved non-shrinking grout-fill in accordance with grout manufacturers' instructions. All grout-fill materials shall be supplied by the contractor. The StormSafe "inlet" and "outlet" ports are clearly labeled with black paint. Inlet and outlet drain lines are to be aligned flush with respect to the interior vault walls.

3.0.9. MAINTENANCE

A. Maintenance and cartridge filter replacement instructions are provided separately by FABCO and are typically site specific.

B. Cartridge filter replacement (in general) for best performance, replace cartridge filters IAW FABCO recommendations. High contaminant locations may require more frequent cartridge replacement. Remove any debris or heavy sediment from the influent and effluent chambers. Enter the StormSafe cartridge chamber in accordance with state and local regulations for enclosed space entry. Remove each cartridge by rotating 30 degrees in the clockwise direction and lifting. Likewise, install the new cartridge and lock in place by rotating 30 degrees in the counterclockwise direction. Disposal of used filter cartridges per local regulations.

END OF SECTION

10001 STORMSACK PLUS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install StormSack Plus Model PSS1626-1E-000 structure, inner components and filters cartridges as shown on the Drawings, and as specified herein.

B. This section includes minimum construction requirements for the StormSack Plus installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

C. Manufacturer: FABCO Industries Inc.

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. TOTAL WEIGHT, EMPTY: 20 LBS (EST)

2.0.2. MATERIALS

A. Vault:
- Frame: Aluminum alloy, 5000 SERIES
- StormSack: Geotextile
- Hardware: Stainless Steel

2.0.3. PERFORMANCE CHARACTERISTICS

A. Capacity: 0.9 CU. FT

B. Filtered Flowrate: 635 GPM (1.4 CFS)

C. Protected bypass flowrate 940 GPM (2.1 CFS)

2.0.4. CLEAR OPENING RANGE:

A. Minimum size 15" X 25"

B. Maximum size: 17" X 27"

PART 3 – EXECUTION

3.0.1. GENERAL INSTALLATION

A. The Carefully remove the storm grate, measure catch basin frame clear opening, and adjust flanges to rest on grate support ledge. Install StormSack and verify each flange is secure and the unit is snug with little movement in the drain. Install corner fillers using provided double-sided tape. Tuck rubber splash guard within drop flanges to direct flow into the unit. Trim if necessary. Reinstall the storm grate directly on the StormSack adjustable support flanges.

B. Recommended minimum vault depth 2" below StormSack

C. Replacement StormSack P/N: PSS1626-1E-200

D. Replacement oil boom P/N: PSS1626-1E-720

END OF SECTION

DIVISION 15 – MECHANICAL

15000 BASIC MECHANICAL REQUIREMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The drawings and specifications shall be considered as complementary, one to the other, so that materials and work indicated, called for, or implied by the one and not by the other shall be supplied and installed as though specifically called for by both. The drawings are to be considered diagrammatic, not necessarily showing in detail or to scale all of the equipment or minor items. In the event of discrepancies between the drawings and the specifications, or between either of these and any regulations or ordinances governing mechanical work, the Contractor shall notify the Engineer of Record in ample time to permit revisions.

1.0.2. SITE INVESTIGATION

A. It shall be the responsibility of the Contractor to visit the site of the work and become familiar with all available information regarding the location of existing facilities. Failure of the Contractor to fully inform himself of all existing conditions will not be cause for additional compensation.

1.0.3. NEW EQUIPMENT AND MATERIALS

A. All equipment and materials used in this installation shall be new, of the best quality and, unless otherwise noted, shall be standard catalog items of the various manufacturers.

1.0.4. STANDARDS

A. The codes and standards covering mechanical work include, but are not limited to:

1. American National Standards Institute (ANSI)
2. American Society for Testing Materials (ASTM)
3. American Society of Mechanical Engineers (ASME)
4. American Welding Society (AWS)
5. National Fire Protection Association (NFPA)
6. National Electrical Manufacturers Association (NEMA)

7. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

8. National Sanitation Foundation (NSF)

9. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

10. South Florida Building Code (SFBC)

11. Codes, Regulations, Ordinances, etc., of the State, County, and/or Municipality, in which the construction is located, and any political division having jurisdiction over this work.

1.0.5. CUTTING AND PATCHING

A. All cutting and patching necessary for the work shall be performed by the Contractor. Where interferences occur, and departures from indicated arrangements are required, the Contractor shall coordinate the mechanical work with the other trades involved and make a determination as to changed locations and elevations of the piping and shall obtain approval from the Engineer of Record and the City for the proposed changes.

1.0.6. SAFETY REQUIEREMENTS

A. In addition to the components specified and shown on the drawings and necessary for the specified performance, the Contractor shall incorporate in the design and show on the shop drawings all the safety features required by the current codes and regulations, including but not limited to those of the Occupational Safety and Health Act of 1970, and Amendments thereto.

1.0.7. METAL FASTENER

A. Unless otherwise indicated, metal fasteners and related parts shall be of aluminum or American made stainless steel and shall be of adequate strength for the purpose intended.

1.0.8. PREVENTION OF ELECTROLYSIS

A. Where the contact of dissimilar metals may cause electrolysis and where aluminum will contact concrete, mortar or plaster, the contact surface of the metals shall be separated using not less than one coat of zinc chromate primer and one heavy coat of aluminum pigmented asphalt paint on each surface; or where deemed necessary by the Engineer of Record, not less than one course of asphalt saturated cotton fabric cemented to both metals with flashing cement, shall be used. Finished works shall be cleaned and excess cement removed.

1.0.9. FACTORY TEST

A. When equipment is required to be factory tested, the results of the tests shall be submitted to the Engineer of Record and the City and approval of the test results shall be obtained before shipment of the equipment.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15001 WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These specifications shall govern the design, materials and installation requirements of the City of Opa-Locka for construction of potable water mains pipes and fittings including water services, valves and other appurtenances.

B. The use of 10-inch, 14- inch or 18-inch pipe, fittings or valves, is not permitted except as may be approved for connections to existing mains.

C. This section does not purport to cover all materials or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

D. The City intent is to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City's designated representative in the field shall be followed by the Contractor.

1.0.3. PROJECT APPROVAL

A. Potable water mains shall follow the City's Public Works Engineering Manual. Mains shall be constructed in accordance to the City's Standard Details, cleaned, tested, and disinfected under the supervision of the City designated Construction Manager, in accordance with Section 1990 "Cleaning and Testing of Mains" and Section 1995 "Disinfection of Water Mains".

B. In addition, systems shall be designed in accordance with the requirements of the Miami-Dade County Department of Regulatory and Economic Resources (RER) Division of Environmental Resource Management (DERM), City's Fire Department, Florida Department of Health, and the City's Public Works Engineering Manual.

1. Installed pipe shall be designed to be mechanically restrained to the design pressure. Lengths of restrained pipe shall be identified on the plans.

1.0.4. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required.

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.5. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 “Special Project Requirements”.

1.0.6. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 “Shop Drawings”.

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.7. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.1. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

   1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe for this project shall be restrained joint pipe Class 51, as manufactured by U.S. Pipe or American Pipe (or approved equal) in accordance with ANSI standard A21.51 working pressure not less than 250 pounds per square inch. The inside lining of the pipe shall be cement mortar as per ANSI Standard A21.4 and AWWA C 104. The outside coating shall be an asphaltic coating approximately one mil thick as specified in AWWA C151. All pipe and fittings shall be poly-wrapped conforming to the requirements of ANSI Standard A21.5 and shall have an 8-mil minimum thickness. For all 6-inch diameter DIP, use class 52.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.2. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

2.0.3. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.4. CONCRETE, MORTAR AND GROUT

A. See Section 03300 “Cast-in Place Concrete, Reinforcing and Formwork”.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15110 “Butterfly Valves”.

C. See Section 15115 “Check Valves”.

D. See Section 15120 “Gate Valves”.

E. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with the City of Opa-Locka Public Works Manual or FDOT.

C. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any water or fire mains, the City shall perform an onsite inspection in order to verify the following:

a. Size of pipe

b. Materials onsite

B. If this inspection does not occur or parts are missing, the shutdown will be canceled.

C. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

D. Timing of all shutdowns will depend on affected stakeholders and shall be coordinated through the City of Opa-Locka Public Works Department.

E. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events

C. Set-up and Verification: The Contractor’s Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

D. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

E. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

F. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. The Contractor shall follow the sequence of construction as indicated in Section 01120 "Sequence of Construction".

G. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

H. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The

Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

I. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

J. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

K. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3" wide blue detector tape for water main. The words "CAUTION WATER LINE BURIED BELOW" on the upper side of the pipe shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all water mains and services or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County standard details.

E. Ductile Iron Pipes shall be laid with minimum vertical cover of 36 inches below finished grade, on City and FDOT roads. The minimum vertical cover over Ductile Iron pipes on Miami-Dade County roads shall be 48 inches. For vertical cover less than 30 inches below finish grade use concrete slab as per City's Standard Detail. For vertical cover between 30 inches and 36 inches below finish grade use ductile iron pipe class 53.

F. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

G. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

H. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

I. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

J. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

K. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

L. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

M. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

N. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

O. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

P. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

Q. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

R. Flanged joints shall be used only where indicated on the plans. Before making up flanged joints in the pipeline, the back of each flange under the bolt heads and the face of each flange shall have all lumps, blisters and excess bituminous coating removed and shall be wire brushed and wiped clean and dry. Flange faces shall be kept clean and dry when making up the joint, and the workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Bolts and nuts shall be tightened by opposites in order to keep flange faces square with each other, and to ensure that bolt stresses are evenly distributed.

S. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the City, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

T. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

U. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all

bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

V. Water main connection shall not be made to the City's main unless water in the trench at the connection point is at least 6" below the bottom of the pipe. When work is not in progress, open end of pipes, fittings, and valves shall be securely closed with polywrap or Filter Fabric so that no trench water, earth, or other substance will enter the pipes or fittings. Where any part of the coating or lining is damaged, the Contractor shall repair the damaged coating or lining in a satisfactory manner at his expense. Pipe ends left for future connections shall be valved, plugged or capped, and properly restrained.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department. Tapping sleeve glands shall be tested and pass a pressure test of 150 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

Y. Only the Public Works Department is authorized to shut-off water service within the City.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground DI pipe fittings 30 inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

JOINT	RESTRAINT (or approved equal)
Push-On DIP	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DIP Pipe	EBAA Iron Series 1100 Megalug

D. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

E. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, in accordance with the standard details.

3.0.5. CLEANING, TESTING AND DISINFECTION

A. See Sections 02505 "Cleaning and Testing of Mains" and 15995 "Disinfection of Water Mains".

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of 24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. Water lines shall not be laid in the same trench with sewer lines, storm sewer, gas lines, fuel lines, or electric cables. The horizontal and vertical separation shall be in accordance with the Department of Health (HRS) latest revision.

B. The existing water main network shall be analyzed during the design to determine which mains can be abandoned and taken out of service during the construction of water mains. Mains to be abandoned shall be left in place and are to be cut, filled with grout and capped to the nearest valve.

C. The cost of tests including water usage and retesting due to failures shall be at the Contractor's expense.

D. For As-Built Drawings information, refer to Section 01725 "As-Builts Drawings".

END OF SECTION

15002 FORCE MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These Specifications shall govern the materials and installation requirements of the City of Opa-Locka for force mains constructed in its service area. All pipe fittings and appurtenances intended for conveying or transmitting fluids under pressure shall conform to the requirements for force main materials contained in the City of Opa-Locka Public Works Manual.

B. This Specification does not purport to cover all material or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

C. It is intent of the City to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The Contractor shall provide all required Certifications.

1.0.3. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required in addition to, not in lieu of, County department inspections (if any).

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.4. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 "Special Project Requirements".

1.0.5. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 "Shop Drawings".

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.6. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.4. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe (D.I.P.) for this pipe shall have a pressure class rating of 150 P.S.I. The interior of ductile iron pipes and fittings shall be poly-lined in accordance with AWWA/ANSI Standard C104/A21.4 or Protecto 401 Ceramic Epoxy with a minimum dry film thickness (DFT) of 40 mils. Either alternative shall require shop drawings approval prior to construction. Cement mortar lining is NOT acceptable for force mains. The outside coating of the pipe shall be asphaltic, approximately one (1) mil thick, as specified in AWWA C151, latest revision. The polyethelene wrap for ductile iron pipe encasement, shall conform to the requirement of ANSI Standard A21.5 and shall be manufactured from virgin polyethelene material. The lining shall have an eight (8) mil minimum thickness. Wrapping tape shall be of the same material.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.3. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

C. Valve Boxes and Covers for Sewer Facilities

1. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

2. The letter “S” shall be cast in the cover for sewer force mains.

3. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

4. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

5. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

6. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

7. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

2.0.4. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15125 “Plug Valves”.

C. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with Section 1 of the City of Opa-Locka Public Works Manual or FDOT.

C. Flow Control: Flow control shall be exercised as required to ensure that no flowing sewage comes into contact with sections of the manhole or sewer pipe under construction.

D. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any sewer mains, the City shall perform an on-site inspection in order to verify the following:

   a. Size of pipe

   b. Materials on-site

4. If this inspection does not occur or parts are missing, the shutdown will be canceled.

5. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

6. All shutdowns shall occur at night. 7. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events.

D. Flow management during construction will be done by the City with flow diversion towards the 42-inch force main on the discharge side of Pump Station 28. Please refer to Section 01120 “Sequence of Construction”.

E. Set-up and Verification: The Contractor's Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

F. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

G. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

H. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. Refer to Section 01120 "Sequence of Construction" for additional information.

I. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

J. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

    1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

    2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

K. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

L. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

M. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3-inch-wide metal green detector tape for force mains. The words “CAUTION FORCE MAIN BURIED BELOW” on the upper side of the pipe shall be printed at 30-inch intervals along the tape. Tape shall be placed 18 inches below grade above all force mains or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County Standard Detail.

E. DI pipe shall be laid with minimum vertical cover of 48 inches.

F. Vertical cover 36 inches to 48 inches below finish grade may be approved on a case-by case basis by the City of Opa-Locka Public Works Department.

G. For vertical cover 30 inches to 36 inches below finish grade, use ductile iron pipe Class 53.

H. For vertical cover less than 30 inches below finish grade, use concrete slab as per Standard Detail 16-7; use of this Standard Detail requires written approval from the City of Opa-Locka Public Works Department.

I. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

J. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

K. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

L. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

M. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

N. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

O. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

P. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

Q. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

R. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

S. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

T. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

U. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

V. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department.

Tapping sleeve glands shall be tested and pass a pressure test of 100 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

D. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

E. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

F. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, as per the City's Standard Details.

3.0.5. CLEANING, TESTING

A. Force mains shall be cleaned and flushed prior to pressure testing, with sufficient pressure to displace all test water and to remove sand, mud, or other deposits. If necessary, other approved methods must be used to ensure the removal of all such deposits. Water used shall be metered and paid for by the Contractor.

B. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

C. The complete force main system shall be pressure tested. The pressure test shall be for two (2) hours at 100 psi minimum test pressure in accordance with AWWA C600. No more than five (5) psi drop over the duration of the test. Final approval will be based on leakage test results. The maximum allowable leakage shall be determined by following AWWA formula:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: D = Pipe diameter in inches
S = Length of lines in lineal feet
P = Average test pressure in psi
L = Allowable leakage for system in gallons per hour

The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his representative.

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of

24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. As Built Drawings information, refer to Section 01725 “As-Builts Drawings”.

B. Force Mains:

1. All force main shall require profile drawing to show high and low elevation of the piping. Top of pipe shall be shown at each 100 ft. intervals, and finish grade.

2. Conflict manholes involving other utilities mains are to be avoided.

3. Design criteria evaluation for Air Release Valves will be required for vertical elevation changes of more than two (2) pipe diameter.

END OF SECTION

15005 PVC C900 WATER MAIN

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes materials, installation, and testing of PVC C900 for water main, conforming to AWWA C900. Size range is 4 through 16 inches.

B. Not for use near gas stations or other sites which may have hydrocarbon contamination.

C. PVC DR 18 (4 to 16-inches color blue) will be allowed for water mains due to current supply chain disruptions. The WASD will accept water main projects with PVC DR 18 for one year to 9/30/2023. Plans approved after 9-30-2023 will require DIP to be used for potable water mains.

D. All PVC pipe used shall be of new or recent manufacturer. Pipe with surface discoloration will not be allowed.

E. Pipe Fittings shall be ductile iron.

1.0.2. RELATED WORK

A. Section 33 01 10.54 (02505) “Cleaning and Testing of Mains”

B. Section 33 01 10.58 (UC-175) “Disinfection of Water Mains”

C. Section 33 14 00 (15060) “Piping and fittings”

D. Section 33 14 13 (UC-000) “Water Mains”

1.0.3. SUBMITTALS

A. Submit shop drawings in accordance with the City specifications or submit the Pre-Approved Product List Manufacturer.

B. PVC Pipe not on the Pre-Approved Products list shall supply the following:

1. Provide affidavit of compliance with AWWA C900.

2. Submit fully dimensioned cross-section of the bell and barrel of the pipe. Show the bell maximum outside diameter in the pressurized area and its minimum wall thickness at the same location.

3. Submit copies of the following manufacturer-required tests conducted on project pipe: a. Quick-burst strength of pipe and couplings. b. Flattening resistance of pipe. c. Record of additional tests after test sample failure.

4. Submit manufacturer's literature of gray iron and ductile-iron fittings including dimensions, thickness, weight, coating, lining, and a statement of inspection and compliance with the acceptance tests of AWWA C110 or C153. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of AWWA C153 fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in AWWA C153 is met.

5. Submit outline drawings and materials description of service connection saddles, corporation stops, and pipe plugs.

6. Submit test results for the restrained joint system to be used certified by an independent test laboratory demonstrating compliance with these specifications for each size and pressure rating.

1.0.4. QUALITY CONTROL

A. No deflection at the pipe joints is allowed for PVC pressure mains.

B. Bending of the Pipe Barrel: Gasketed PVC pies can be laid to the line of a curved trench by bending the pipe barrel into a curved shape. The procedure is as follows:

1. Keep the spigot in straight alignment with the bell.

2. Place compacted backfill around the assembled joint. This backfill restrict movement while the curvature is being made.

3. Place compacted backfill at the inside of the curve at the mid-point of the pipe length to form a fulcrum.

4. Using only manual effort, move the leading bell of the pipe length to be curved.

5. Longitudinal barrel deflection along the pipe barrel shall be based on half of the allowable longitudinal deflection established by the PVC Pipe Association Handbook of PVC Pipe Design and Construction Table 8.4. The allowable pipe barrel deflection in inches shown below is per 20-foot pipe length.

Pipe Size (inch)	4	6	8	10	12
Allowable Bending Offset at the opposite end of the R18 PVC 20-foot pipe length, inches	12	8.5	6.5	5	4

C. PVC pipe shall not be over-homed.

D. Pipe Bedding Material shall be class 1 backfill material with a maximum rock size of 3/4-inches.

E. The City shall have the final determination on allowing the use of PVC C900 DR 18 for

potable water mains. The Contractor/Design Engineer shall obtain approval in writing prior to finalizing 100% construction plans.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Pipe 4-inches through 16 inches shall conform to AWWA C900 DR 18, rubber-ring gasket bell end or plain end with elastomeric gasket coupling, cast iron equivalent outside diameter, material cell classification 12454 per ASTM D1784, latest revision.

B. All potable water pipe and fittings installed under this Project shall be color coded as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall blue pipe, shall have a co-extruded blue external skin, or shall be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall.

C. Pipe shall have a gasket locking system at the bell end. This does not restrain the pipe but rather locks the pipe in place and prevents the gasket from rolling.

2.0.2. FITTINGS

A. Fittings shall be cement lined, Ductile Iron and conform to AWWA C153, latest revision or AWWA C110, latest revision.

2.0.3. FLANGES

A. Flanges on outlets of fittings shall be Class 250 per ASME B16.1.

B. PVC flanges shall be of the one-piece solid socket design and shall be made of the same material as the pipe. Manufacturer's pressure rating shall be at least 250 psi at a temperature of 73°F. Minimum burst pressure shall be 500 psi. Flanges shall match the dimensions of ASME B16.5, Class 250, steel flanges for outside diameter, bolt circle, and bolt holes. Do not use Van Stone flanges.

2.0.4. OUTLETS

A. All connections to PVC require a saddle.

2.0.5. RESTRAINED JOINTS

A. Provide external restrained joints as indicated in the drawings. Restrained joints shall be provided by restraining systems that incorporate a wedge restraint on the restraint ring to provide positive restraint.

B. Internal Joint Restraint: RieberLok and Field Lok type gasket restraints are allowed for PVC Pipe in pressure applications.

C. Restraint devices for bell-and-spigot joints shall consist of a split restraint ring installed

on the spigot, connected to a solid backup ring seated behind the bell.

D. Restraining Glands shall be EBAA Iron Series 2000 and 1600 or approved equal.

E. The ASTM A536 ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

F. T-bolts, studs, and connecting hardware shall be high-strength, low alloy material in accordance with AWWA C111.

G. Design restraining devices to have a 2:1 safety factor based on the design strength of the pipe..

PART 3 – EXECUTION

3.0.1. PRODUCT MARKING

A. The pipe shall be marked by the manufacturer at 5-foot intervals and each coupling to identify the nominal diameter, the outside diameter base, that is, cast-iron or steel pipe (IPS), the material code for pipe and couplings, the dimension ratio number, AWWA C900, and the seal of the testing agency that verified the suitability of the material for potable water service (NSF/ANSI 61).

3.0.2. PRODUCT MARKING

A. PVC shall be protected from UV degradation caused by extended exposure to direct sun. Pipe with surface discoloration shall not be installed and immediately removed from the project site. Tarps used to protect the pipe from sunlight shall be placed to allow for adequate ventilation to prevent heat build-up.

B. Ship, store, and place pipe at the installation site, supporting the pipe uniformly. Avoid scratching the pipe surface. Do not stack higher than 4 feet or with weight on bells. Cover to protect from sunlight.

C. Do not drag PVC pipe over the ground, drop it onto the ground, or drop objects on it.

D. Store loose pipes on racks with a maximum support spacing of 3 feet. Provide shades for pipe stored outdoors or installed outdoors until the pipe is filled with water. Store fittings indoors in their original cartons.

E. Store solvent cement indoors or, if outdoors, shade from direct sunlight exposure. Do not use solvent cements that have exceeded the shelf life marked on the storage container.

3.0.3. HANDLING PIPE

A. Hoist pipe with mechanical equipment using a cloth belt sling or a continuous fiber

rope that avoids scratching the pipe. Do not use a chain. Pipes up to 16 inches in diameter may be lowered by rolling on two ropes controlled by snubbing. Pipes up to 6 inches in diameter may be lifted by hand..

3.0.4. INSTALLING BURIED PIPING

A. Pipe Bedding material for PVC shall be well graded Class 1 backfill with a max rock size of ¾-inch compacted in 6-inch lifts. The minimum trench width shall be the pipe width plus 24-inches (12-inches on each side). Backfill material shall be No. 57 limerock with a maximum particle size of 2-inches.

B. Before installation, check pipe and fittings for cuts, scratches, gouges, buckling, kinking, or splitting on pipe ends. Remove any pipe section containing defects by cutting out the damaged section of pipe.

C. Do not install PVC pipe when the temperature is below 40°F or above 140°F. D. Do not install pipe that is gouged or scratched forming a clear depression.

D. Install in accordance with AWWA C605, and as follows.

1. When installing pipe in trenches, do not deviate more than 1 inch from line or 1/4 inch from grade. Measure for grade at the pipe invert.

2. Backfill materials in the pipe zone shall be imported sand per Section 31 23 33 (02315) “Trenching and Backfilling of Piping Systems”. Do not add successive layers unless the previous layer is compacted to 90% relative compaction per ASTM D1557.

3. Compact material placed within 12 inches of the outer surface of the pipe by hand tamping only.

4. Compact trench backfill to the specified relative compaction. Do not float pipe. Do not use high-impact hammer-type equipment except where the pipe manufacturer warrants in writing that such use will not damage the pipe.

5. Pipe installed below the water table where the homing mark is not visible shall utilize an over-insertion prevention device.

3.0.5. UNDERGROUND LOCATION

A. All PVC installed shall have the ability to be located aboveground. Tracer Wire, Magnetic Balls and Location Safety Tape (all three) are all required by the Department.

B. Install 3M compatible magnetic location ball markers every 100 feet approximately 1-foot above the PVC main on straight runs and at any bends, vertical or horizontal. See WASD Standard Detail R 5.0.

C. Install 10-gauge tracer wire taped to the buried PVC pipe. The tracer wire shall provide a continuous path which can locate the buried installation by inducing a current to the tracer wire.

D. Install electronically detectable safety tape approximately 1 to 2 feet above the top of the buried PVC pipeline as a visible marker for future excavation.

3.0.6. ASSEMBLY OF RUBBER-GASKET PIPE JOINT

A. All Lay the pipe section with the bell coupling facing the direction of laying.

B. Lubricate the spigot over the taper and up to the full insertion mark with the lubricant supplied by the pipe manufacturer. If the lubricated pipe end touches dirt, clean the pipe end and reapply lubricant.

C. Insert the spigot into the bell and force it slowly into position.

D. Check that the rubber ring has not left the groove during assembly by passing a feeler gauge around the completed joint.

3.0.7. CLEANING AND TESTING

A. All of the piping installed under this project shall be tested as follows and as directed by the Engineer.

1. With exceptions as noted below, all PVC piping installed under this Contract shall be cleaned and tested according to section 33 01 10.54 (UC-170) "Cleaning and Testing of Mains".

2. Unless otherwise specified elsewhere herein, all PVC water main shall be tested at 150 psi in accordance with ANSI/AWWA C605.

3.0.8. FIELD QUALITY CONTROL

A. All mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. Test PVC Pipe mains in accordance with ANSI/AWWA C605-once all backfill is in place and fully compacted, and after all thrust blocks, if applicable, have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the Department as a condition precedent to the approval and acceptance of the system.

3.0.9. DESINFECTION

A. Disinfect in accordance with section 33 01 10.58 (UC-175) “Disinfection of Water Mains and ANSI/AWWA C651 – Disinfecting Water Mains. During the period that the chlorine solution or slug is in the section of pipeline, open and close valves to obtain a

chlorine residual at hydrants and other pipeline appurtenances. Swab exposed faces of valves and blind flanges prior to bolting flanges in place with a 1% sodium hypochlorite solution. Disinfect isolation valves, pipe, and appurtenances per AWWA C651, Section 4.7.

B. Flush with potable water until discolored water, mud, and debris are eliminated. Swab interior of pipe and fittings with a 1% sodium hypochlorite solution. After disinfection, flush with potable water again until water is free of chlorine odor. After confirming the chlorine residual, flush the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is either within 0.5 mg/L of the replacement water or no higher than that generally prevailing in the distribution system.

C. Discharge of chlorinated water into watercourses or surface waters is regulated by the National Pollutant Discharge Elimination System (NPDES). Disposal of the chlorinated disinfection water and the flushing water is the Contractor's responsibility. Schedule the rate of flow and locations of discharges in advance to permit review and coordination with Owner and cognizant regulatory authorities. For measuring chlorine concentration, supply and use a medium range, drop count, DPD drop dilution method kit per AWWA C651, Appendix A.1. Maintain kits in good working order available for immediate test of residuals at point of sampling.

END OFSECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Without limiting the generality of the other requirements, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available.

1. Association of State Highway Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture–Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
AASHTO M-306	Standard Specification for Drainage, Sewer, Utility, and Related Casting

2. American Society for Testing Materials (ASTM)

ASTM A48	Standard Specification for Iron Castings
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
ASTM B92	Standard Specification for Unalloyed Magnesium Ingot and Stick For Remelting
ASTM B148	Standard Specification for Aluminum-Bronze Sand Castings
ASTM B209	Standard Specification for Deformed and Plant Carbon-Steel Bars for Concrete Reinforcement
ASTM C478	Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
ASTM D4	Standard Test Method for Bitumen Content
ASTM D1784	Standard Classification System and Basis for Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds

ASTM D2584	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D2657	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings ASTM D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

3. American National Standards Institute (ANSI)

ANSI B16.1	Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250

4. American Water Works Association (AWWA)

AWWA C105 Polyethylene Encasement for Ductile Iron Pipe

AWWA C110 Ductile Iron and Gray Iron Fittings

AWWA C111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings

AWWA C115 Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges

AWWA C150 Thickness Design of Ductile Iron Pipe

AWWA C151 Ductile Iron Pipe, Centrifugally Cast

AWWA C210 Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings

AWWA C508 Swing-Check Valves for Waterworks Service, 2-In. through 24-In. (50-mm through 600-mm)

AWWA C550 Protective Interior Coatings for Valves and Hydrants

AWWA C600 Installation of Ductile Iron Water Mains and their Appurtenances

5. City of Opa-Locka Code of Ordinances

6. Florida Administrative Code (FAC)

7. Florida Building Code

8. International Organization for Standards (ISO) ISO 8179 Ductile Iron Pipes, Fittings, Accessories and their Joints – External Zinc-Based Coating

9. Miami-Dade County Code of Ordinances

10. Miami-Dade Division of Environmental Resources Management, Department of Regulatory and Economic Resources (RER-DERM) Regulations

11. Occupational Safety and Health (OSHA) Regulations

12. Society for Protective Coatings (SSPC) SSPC-PA 2 Procedure for Determining Conformance to Dry Coating Thickness Requirements

13. Ten State Standards

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15060 PIPING AND FITTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section describes materials, testing, and installation of ductile-iron pipe and fittings for water. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, fittings and accessories within the limits of work, as shown on the drawings and specified herein.

B. Where references are made to other standards or codes, unless specific date references are indicated the latest edition of said standard or code shall govern.

1.0.2. WORK NOT INCLUDED UNDER THIS SECTION:

A. Piping installation for various types of piping systems is specified other sections herein that constitute the Design Standards and Construction Details. Installations specified in this section are supplementary to those sections and in the case of conflict the more stringent condition shall prevail.

1.0.3. PIPING LAYOUT AND DESIGN CRITERIA:

A. Field verify dimensions prior to preparation of layout and shop drawings. Obtain the following information from the drawings and specifications:

1. Elevation of the pipe centerline and of the completed ground.

2. Alignment of the pipeline.

3. Field test hydraulic gradient elevation (HGL).

4. Nominal internal diameter, ID.

5. Design internal pressure class or HGL.

6. Joint types.

B. Obtain shop drawing approval prior to fabrication of piping. All items not specifically mentioned in the specifications or noted on the approved plans, but which are reasonably necessary to for a complete, functional, and satisfactory installation shall be included.

1.0.4. SUBMITTALS

A. Submit shop drawings in accordance with the General Provisions.

B. Provide an affidavit of compliance with standards referenced in this specification, e.g., AWWA C151, AWWA C153, etc.

C. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of pipe and fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in relevant standard is met.

D. Submit piping layout profile drawings showing location and dimensions of pipe and fittings; submit after equipment and valve submittals have been reviewed and marked "Resubmittal not required." Include laying lengths of valves, meters, in-line pumps, and other equipment determining piping dimensions. Label or number each fitting or piece of pipe. Piping having identical design pressure class, laying lengths, and bell-and-spigot dimensions that is to be placed in long straight reaches of alignment may have the same identifying label or number.

E. Provide the following information:

   1. Lining thickness.

   2. Wall thickness.

   3. Material test data for this project.

   4. Show deflections at push-on and mechanical joints.

   5. Submit joint and fitting details and manufacturer’s data sheets.

F. Fully detailed drawings of all fittings proposed shall be supplied by the manufacturer with its bid. The tabulated nominal weight of each size and type of fitting shall also be supplied by the manufacturer for all items proposed. This weight shall be that of the bare casting prior to application of any lining or coating.

G. Submit calculations and test data proving that the proposed restrained joint arrangement for restrained joint pipe can transmit the required forces with a minimum safety factor of 1.5.

H. Submit copy of manufacturer's quality control check of pipe material and production. Include hydrostatic test records and acceptance test records. For each acceptance test, submit a stress-strain diagram showing yield strength, yield point, tensile strength, elongation, and reduction in area. Provide specimen test section dimensions and speed and method used to determine speed of testing, method used for rounding of test results, and reasons for replacement specimens, if any. Submit ring-bending test of pipe of the same diameter and pressure class as the pipe required for this project to prove ring-bending stress at 48 ksi results in a factor of safety of 2.0.

I. For Ductile Iron Pipe and fittings, submit certificate that cement for mortar lining complies with ASTM C150, designating type.

J. Submit test report on physical properties of rubber compound used in the gaskets.

K. Submit test reports and certifications for ceramic epoxy lining as specified herein. Submit applicators qualifications. Submit manufacturer's written recommendations for application and repair of coating.

L. Submit drawing or manufacturer's data sheet showing flange facing, including design of facing serrations.

M. Submit weld procedure specification, procedure qualification record, and welder's qualifications prior to any welding to ductile-iron pipe or fittings.

1.0.5. DELIVERY, STORAGE, AND HANDLING

A. During shipping, delivery and installation of pipe and accessories, handle in a manner that is incompliance with the manufacturer's recommendations, and employ procedures that ensure delivery of an undamaged operable product.

B. Exercise particular care not to damage coatings by limiting exposure or physical contact with other materials, objects, or the environment.

1.0.6. INSPECTION

A. The Owner's Representative will inspect materials, production, and testing of pipes, fittings, and special pieces at manufacturer's plant.

1.0.7. QUALITY ASSURANCE

A. All pipe, fittings and other materials supplied under this contract shall be subject to inspection while still on the delivery truck. It is the sole responsibility of the vendor and supplier to make prior contact with the Storekeeper or the Construction Management section and provide a minimum of 48-hours prior notice of delivery. When so notified, the City will make arrangements for inspection of the material upon arrival or within a reasonable time thereafter. Material shall not be unloaded without inspections taking place either prior to or, if necessary for examination, during the unloading procedure. The City will not be responsible for any delays or additional costs created by noncompliance with the requirement for prior notification or the requirement for thorough inspection.

B. Materials shall be delivered in complete compliance with the AWWA Standards as modified herein, without damage, and shall match or exceed the quality of any samples supplied. The City absolutely reserves the right to require samples of any material supplied and to perform whatever tests considered by the Engineer, whose decision shall be final, to be in the City's best interest on said samples. Where such tests are

of a destructive nature, the sample, if it passes the test will be paid for (at cost as shown by invoice) by the City. Samples failing will be immediately replaced with suitable material at the supplier's/Contractor's expense. Samples required prior to order as a condition for purchase or as a materials submittal for approval will be at the supplier's/Contractor's expense but, if approved and not used for destructive tests, may be used in the work with permission from the Engineer.

C. Materials found to be defective, not in strict compliance with the quality standards of samples supplied or these specifications shall be immediately returned to the vendor at his expense. If defects are discovered at a later time, the vendor shall be required to remove said items and shall bare all costs for so doing together with any replacement costs. Rejection of items may subject the vendor to liquidated and/or actual damages as specified elsewhere herein.

D. Foundries supplying materials shall maintain their metallurgical records for a minimum period of two (2) years after fabrication and firms not doing so may be found in default.

E. Foundries which provide cause for rejection include but are not limited to; incorrect metallurgy or metallurgy which cannot be verified to the complete satisfaction of the Engineer; foundry identification/location, size, pressure and material identification information lost, removed, non-existent, or not visible when assembled; not in complete compliance with all applicable ANSI/AWWA Standards as modified herein and/or these specifications; not in compliance with NSF/ANSI; not in compliance with approved shop drawings; out of roundness in excess of ANSI/AWWA requirements; dimensional differences in excess of ANSI/AWWA requirements; rough exterior coating; chipped, cracked, scratched or otherwise damaged interior or exterior coatings or linings; interior or exterior coatings which are too thin; coatings too thick to allow proper assembly; coatings too thick to allow proper grip by restraining gaskets or other restraining elements; pin holes or honey combing of pipe; weld spatter or excess metal in gasket grooves or the whole of the bell area; bell areas which are distorted or otherwise improperly cast; spigots which are out of round, not of proper dimension, or not beveled to an extent that will allow easy assembly of the pipe joint; gaskets which are defective or of the wrong material; lack of joint materials; improper or defective joint materials; bolting of the wrong material or size; electro galvanizing or other exterior plating when hot-dip galvanizing is required; incorrect, flawed or damaged interior coating or lining; lack or non-submittal of all required certifications; non-timely submission of certifications; incorrect/incomplete certifications or certifications lacking the signature, date and seal of a professional engineer when so required; flanges which are too thin, not a right angles to the pipe centerline, or otherwise distorted; together with all other flaws or defects which in the opinion of the Engineer, whose decision shall be final, adversely affect the assembly and/or function of the piping system as intended.

PART 2 – PRODUCTS

2.0.4. PIPE AND FITTINGS: DUCTILE IRON

A. GENERAL

1. As used herein, "ANSI" denotes the American National Standards Institute, "AWWA" denotes the American Water Works Association, and "ASTM" denotes the American Society for Testing and Materials.

2. All pipe and fittings to be furnished hereunder shall conform to the referenced ANSI and/or AWWA Standard as modified herein, as appearing in the following sections.

3. All markings required on pipe and fittings, shall be permanent and clearly legible and located such that they will not be hidden or destroyed when assembled into the intended system. Plainly mark each length of straight pipe and each fitting at the bell end to identify the design pressure class, the wall thickness, and the date of manufacture, and the proper location of the pipe item by reference to the layout schedule. Mark the spigot end of restrained joint pipe to show clearly the required depth of insertion into the bell.

B. DUCTILE IRON PIPE

1. For Water Mains and Sewage Mains:

a. DI pipe shall be centrifugally cast in metal molds or sand lined molds in accordance with AWWA C151 of grade 60-42-10 ductile iron. The above standard covers ductile iron pipe with nominal pipe sizes from 3 inches up to and including 64 inches in diameter.

b. The pipe thickness shall conform to standard pressure classes AWWA C151 for the following sizes. The pressure class specified is the minimum permitted.

NOMINAL PIPE DIAMETER (INCHES)	CLASS
4 thru 12	350
14 thru 24	250
30 thru 54	150

c. Depending on design conditions, the City reserves the right to require special thickness classes of DI pipe per AWWA C151 for the following sizes. Flanged (FLG) pipe shall not be less than Class 53 as identified in Table 50.15 of AWWA C150-91.

PIPE MATERIAL	NOMINAL PIPE DIAMETER (INCHES)	CLASS	TYPE OF JOINT
DI	4 thru 12	52	MJ or PO
DI	14 thru 54	51	MJ or PO

DI	All	53	FLG

C. GASKETS

1. For Water Mains:

   a. Water Mains shall use SBR gaskets for typical applications and field conditions.

   b. All gaskets for water applications shall be in full compliance with NSF/ANSI 61. Manufacturers shall maintain their NSF certification for the duration of the Contract and any extensions thereof.

2. For Sewage Mains:

   a. Sewage Mains Shall use Neoprene or EDPM gaskets for typical applications and field conditions.

3. Areas with chemical or hydrocarbon contamination shall use the gasket material as recommended by RER-DERM. All joints shall be equipped with Viton gaskets

B. FITTINGS

Fittings and Joints (Water & Force Mains)

1. Fittings shall be manufactured in accordance with AWWA C110 for nominal pipe sizes 3 inches to 64 inches, and shall be either flanged or mechanical joint. Any other fittings, not included in AWWA C110 shall conform in design and performance to the requirements of this Section.

2. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings.

3. Ductile iron pipe above grade shall be flanged.

4. Mechanical and push-on type joints shall be in accordance with AWWA C111.

5. Flanges for flanged pipe shall be in accordance with AWWA C115, shall be ductile iron, shall be manufactured in the United States, shall be rated at 250 psi maximum working pressure, and shall be similar to flange Class 125 per ANSI B16.1. Where shown on the Drawings, pipe and fittings shall be furnished with flanges similar to flange Class 250 per ANSI B16.1. Fittings shall be provided with flanges having a bolt circle and bolt pattern the same as the adjacent pipe and/or mechanical devices.

6. No raised face flanges shall be used. The raised faces shall be milled flat.

7. Flange gaskets shall be full face neoprene rubber. Gasket material (push-on) mechanical joint, gasket restrained shall be neoprene.

Restraining (Water & Force Mains)

1. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

2. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

3. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

4. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

Fittings Conforming to ANSI/AWWA C110/A21.11-12 (Water & Sewer Use)

1. Restrained push-on joint fittings shall be cast ductile iron for use with ductile-iron pipe as specified above. Standard mechanical joint, and push-on joint fittings shall also be ductile iron for use with ductile-iron pipe as specified above. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, flange joints and push-on joints shall conform to ANSI/AWWA Standard C110/A21.10- 12, "Ductile-Iron and Gray-Iron Fittings ". In addition, fittings with mechanical joints and push on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings".

2. The weight of fittings shall be as given in ANSI/AWWA C110/A21.11-12 for ductile-iron fittings. The weight of mechanical joint fittings shall be as established in Tables 4 through 13. The weight of flanged joint fittings shall as stablished in Tables 14 through 21.

Fittings Conforming to ANSI/AWWA C153/A21.53-11 (Water & Sewer Use)

1. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, and push-on joints shall conform to ANSI/AWWA Standard C153/A21.53-11, "Ductile-Iron Compact Fittings ". In addition, fittings with mechanical joints and push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, “Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings" except as otherwise allowed in C153. Mechanical joint glands shall be ductile-iron only.

2. The weight of a fitting supplied under the contract shall not be less than ninety-five (95) percent of the tabulated nominal weight supplied by the manufacturer’s catalog literature for that fitting. Further, the weight of fittings supplied shall not be more than five (5) percent above the same tabulated nominal weight.

C. JOINTS AND ACCESSORIES

Joints in below-ground piping shall be flexible push-on or Mechanical joints, except where flanged joints are required to connect to valves, meters, and other equipment. Provide unrestrained buried joints except where restrained joints are specifically shown in the drawings. Joints in aboveground or submerged piping or piping located in vaults and structures shall be grooved end or flanged. Restrained joints for piping 6 inches and larger shall be TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug. Weldments for restrained joints shall be tested by the liquid penetrant method per ASTM E165. Restrained joints for field closures shall be “Megalug” by EBAA Iron.

Push-On Type Joints (Single Gasket and Single Gasket with Gasket Restraint)

Push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12.

1. The required number of gaskets for each push-on joint pipe plus one extra for every 50 joints or fraction thereof, shall be furnished with each order. The gaskets shall be shipped in suitable protective containers. All single gasket pipe shall be as manufactured by United States Pipe and Foundry Company (Tyton), by the American Cast Iron Pipe Company (Amarillo Fastite), by McWane, Inc. (Mix of Tyton and Fastite), Tyler/Union (Tyton) or approved equal.

2. Push-on joints together with both their regular and gasket-restraint gaskets shall be of the design, dimensions and tolerances of either those provided by American Cast Iron Pipe Company (Amarillo Fastite/Fast-Grip) or those provided by United States Pipe and Foundry Company (Tyton/Field Lok). No other designs will be acceptable.

3. The pressure rating shall be stamped on the restrained gasket. The restrained gasket and joint restraining system shall conform to ANSI/AWWA Standard C111/A21.11-12 rated at the following:

Size	Pressure Rating (Min.)
4-inch through 12-inch	350
14-inch through 20-inch	250
24-inch	200
30-inch and above	150

4. The restrained gasket shall be manufactured a color other than black to allow for visual inspection of the pipeline. The restrained gasket color shall be consistent throughout the system and shall be inherent within the rubber, not painted.

5. This type of joint restraint shall not be used above grade or as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe. Pipe which will be field cut shall be measured at the location of the cut to check that the pipe diameter and circumference are within the particular manufacturer's tolerances for a spigot

Mechanical Joints

1. Mechanical joints for fittings shall conform to ANSI/AWWA Standard C111/A21.11-12. Bolt holes for mechanical joints shall be equally spaced, and shall straddle the vertical centerline. Tee head bolts and hexagonal nuts for all mechanical joints in fittings shall be of high strength low-alloy steel with composition, dimensions and threading as specified in ANSI/AWWA Standard C111/A21.11-12. Glands shall be of ductile-iron construction for ductile iron fittings, and cast gray iron or ductile iron for cast gray-iron fittings.

2. The proper number of gaskets, glands, bolts and nuts, all conforming to ANSI/AWWA Standard C111/A21.11-12, plus one extra gasket for every 10 joints or fraction thereof, shall be furnished with each order. The gaskets and joint accessories shall be shipped in suitable protective containers.

3. Follower glands held in place with set screws will not be acceptable.

4. Segmented glands will not be acceptable.

Mechanical Joint Megalug-Type Restraining Systems

1. In any mechanical joint or push-on joint underground piping system restrained glands may be utilized for underground pipeline. The restraint mechanism shall consist of multiple individually activated gripping surfaces to maximize the restraint capability. Rings and gripping surfaces to be ductile iron conforming to ASTM A536 "Ductile Iron Castings." The ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded

liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

2. Foreign and domestic manufactured restrained glands are allowed for pipelines 24-inches and below unless otherwise required by the City due to Federal or State funded projects which require domestic manufacture. In sizes 30, 36, 42 and 48-inch the prior written permission of the Engineer is required to use non-domestic manufactured restraining glands. The country of origin shall be clearly identified on the restraining gland and shop drawing.

3. The City absolutely reserves the right to require other forms of restraint where in the opinion of the Engineer the use of this form of restraint is not in the best interest of the City and his decision shall be final. Use of this type of restraint is restricted to underground mechanical joint or push-on joint applications and in general may not be used above grade or as a substitute for flanged joints.

4. The Megalug restraint systems manufactured by EBAA Iron Sales, Eastland Texas, will be considered the standard of quality for comparison purposes and if the City has any doubts as to the durability, quality, or ability to restrain of a proffered substitute, the entity offering the substitute shall bear the entire burden of proving this equality to the complete satisfaction of the Engineer. Other manufacturers producing this type of restraint system shall submit data with their shop drawings showing that their restraint system has been in the marketplace for a minimum of three (3) years in this country.

5. Each thrust-resistant mechanical joint or push-on joint made up with this type of restraint and the pipe and fitting of which it is a part, shall be designed to withstand an axial thrust from an internal pipeline pressure of at least 150 psi at bulkhead conditions without reduction because of its position in the pipeline nor for support from external thrust blocks.

6. This type of joint restraint shall not be used above grade except as previously specified nor shall it be used as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe.

Outlets and Nozzles

1. Provide outlets three quarters of an inch and smaller by direct tapping Ductile Iron Pipe in accordance with AWWA C600-10, Section 4.8. Provide outlets larger than three quarters of an inch up to 2 inches by tapping the pipe and attaching a service clamp. or use a threaded welded-on boss. Use American made stainless steel clamps for exposed piping. For outlets larger than 2 inches, use a tee with a flanged outlet. For outlets larger than 2 inches in buried piping, use a tee with a restrained joint outlet.

Ductile-Iron Pipe Weldments

1. All welding to ductile-iron pipe, such as for bosses, joint restraint, and joint bond cables, as applicable, shall be done at the place of manufacture of the pipe. Perform welding by skilled welders experienced in the method and materials to be used. Welders shall be qualified under the standard qualification procedures of the ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

2. Welds shall be of uniform composition, neat, smooth, full strength, and ductile. Completely grind out porosity and cracks, trapped welding flux, and other defects in the welds in such a manner that will permit proper and complete repair by welding.

3. Material for fittings with welded-on bosses shall have a Charpy notch impact value of minimum 10 ft-lbs under the conditions defined in ANSI/AWWA C151/A21.51-09. Test completed welds by the liquid penetrant method per ASTM E165. Completed welds shall be inspected at the place of manufacture by the liquid penetrant method. Conform to the requirements specified in ASTM E165, Method A, Type I or Type II. The materials used shall be water washable and nonflammable.

D. LININGS AND COATINGS

Saltwater Intrusion and Corrosive Soils Requirements

1. The project site is considered saltwater intrusion area where the installation is subject to groundwater level variation. For these areas, the City requires the use of V-Bio Enhanced Polyethylene Encasement and ductile iron pipe with a zinc basecoat under the asphaltic topcoat. All ductile iron pipe, fittings and valves shall be wrapped with the V-Bio Polyethylene Enhanced Encasement and have the zinc protective coating factory applied.

2. For corrosive soils encountered outside of saltwater intrusion areas during construction V-Bio Polyethylene Encasement shall be installed to protect the ductile iron main, fittings and valves.

3. Zinc Basecoat: The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Ductile iron fittings shall also have a zinc protective coating sprayed on at the factory at a minimum of 3 mils.

4. The V-Bio Polyethylene Enhanced Encasement shall be accordance with AWWA C600 and ANSI/AWWA C105, “Polyethylene Encasement of Ductile-Iron Pipe Systems”. Color shall be blue for potable water and green for sanitary sewer,. Polyethylene encasement for use with ductile iron pipe systems shall consist of

three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside layer of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a corrosion inhibitor and antimicrobial biocide to control galvanic corrosion. Product: V-Bio or approved equal.

5. Polyethylene encasement for ductile-iron pipe shall be supplied as a flat tube meeting the dimensions of Table 1 in AWWA C105 and shall be supplied by the ductile-iron pipe manufacturer.

6. Plastic adhesive tape shall consist of polyolefin backing and adhesive which bonds to common pipeline coatings including polyethylene. Products: Canusa Wrapid Tape; Tapecoat H35; Polyken 934; AA Thread Seal Tape, Inc.; or approved equal.

7. Install the polyethylene to completely encase the pipe and fittings to provide a watertight corrosion barrier. Continuously secure overlaps and ends of sheet and tube with polyethylene tape. Make circumferential seams with two or more complete wraps, with no exposed edges. Tape longitudinal seams and longitudinal overlaps, extending tape beyond and beneath circumferential seams. Wrap bell-spigot interfaces, restrained joint components, and other irregular surfaces with wax tape or moldable sealant prior to placing polyethylene encasement. Minimize voids beneath polyethylene.

8. Place circumferential or spiral wraps of polyethylene tape at 2-foot intervals along the barrel of the pipe to minimize the space between the pipe and the polyethylene. Overlap adjoining polyethylene tube coatings a minimum of 1 foot and wrap prior to placing concrete anchors, collars, supports, or thrust blocks. Hand-wrap the polyethylene sheet, apply two complete wraps with no exposed edges to provide a watertight corrosion barrier, and secure in place with 2-inch-wide plastic adhesive tape.

9. Repair polyethylene material that is damaged during installation. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch-wide plastic adhesive tape. Repair polyethylene encasement at all service connections in accordance with AWWA C600- 10, Section 4.8.

Asphaltic Coating

1. All Ductile Iron pipe and fittings shall be outside-coated with an asphaltic material applied by means of the airless spray method. The exterior coating shall comply with ANSI/AWWA C151/A21.51 for this type of coating, shall be smooth without pinholes, thin, bare or overly thick areas. Smoothness shall be such that when hand rubbed, no “sand paper” feeling will be experienced and such that the spigot area will readily slide through the gasket without pulling, tearing, rolling or otherwise disturbing the sealing capabilities of the gasket. Spigot ends shall be beveled prior to coating to an extent that will permit ready insertion of the spigot through the gasket area.

E. Linings

For Water Mains - Cement-Mortar

1. Ductile Iron Pipe and fittings unless otherwise specified shall be double-thickness cement lined and seal-coated in accordance with ANSI/AWWA Standard C104/A21.4-14, "Cement Mortar Lining for Ductile-Iron Pipe and Fittings ".

For Sewage Force Mains – Ceramic Epoxy

1. The interior of all ductile iron pipes and fittings shall be lined with an epoxy lining. The epoxy lining shall be Protecto 401 Ceramic Epoxy as manufactured by the Protecto Division of Vulcan Painters, Inc. All DI pipe and fittings shall be lined with a minimum dry film thickness of 40 mils, except for the gasket groove and spigot end up to six (6) inches back from the end of the spigot which shall be lined with ten (10) mils of the material. All ductile iron pipe and fittings shall be checked for dry film thickness in accordance with the Society for Protective Coatings Paint Application Standard No. 2 (SSPC-PA 2). Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on that date. The pipe supplier shall furnish a certificate stating that lining applicator has complied with all specification requirements relative to the material, its application, and inspection. Surface preparation, number of coats, application of the lining material, and field touch-up shall be in strict accordance with the lining material manufacturer's recommendations. During the installation of the pipe, the lining material manufacturer shall provide the services of a field engineer to instruct and demonstrate to the Contractor's personnel the procedure for the field touchup of lining where field cuts and taps were required. Holiday inspection shall be conducted using test equipment described in AWWA C210, Section 5.3.3.1. In accordance with coating manufacturer's recommendation, holiday testing may be conducted any time after the coating has reached sufficient cure.

F. INSPECTION AND CERTIFICATION

1. Inspection

   a. All ceramic epoxy lined ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PC-2 Film Thickness Rating. Re-line any pipe whose lining is below the specified minimum thickness.

   b. The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Re-line any pipe not passing the test.

   c. Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on the date.

Procedures for Sealing Cut Ends and Repairing Field Damaged Areas:

1. Remove burrs caused by field cutting of ends or handling damage and smooth out the edge of the lining if rough.

2. Remove all traces of oil, grease, asphalt, dust, dirt, etc.

3. Areas of loose or damaged lining associated with field cutting the pipe shall be repaired, if approved by the Engineer, as recommended by the pipe manufacturer. The damaged area shall be stripped back by chiseling or scraping about 1 to 2 inches into the well-adhered lining before patching. The exposed metal and the 1 to 2-inch lining overlap shall be roughened with a coarse grade of emery cloth (#40 grit), rasp or small chisel. Avoid wire brushing or similar buffing which would make the surface too smooth for good adhesion.

4. With the area to be sealed or repaired absolutely, clean and suitably roughened, apply a coat of Protecto Joint Compound by brush in accordance with the manufacturer's recommendations.

PART 3 – EXECUTION

3.0.1. General:

A. Furnish and maintain all barricades and flashing warning lights necessary to warn of the construction throughout the project.

B. Pipe and fittings shall at all times be handled with great care to avoid damage. Exercise particular care not to injure pipe coatings. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions.

C. All work shall be performed by skilled workmen experienced in pipeline construction.

D. All pipe and fittings shall be adequately supported by clamps, brackets, straps, concrete supports, rollers or other devices as shown and/or specified. Supports or hangers shall be spaced so that maximum deflection between supports or hangers shall not exceed 0.050 inch for pipe filled with liquid, but shall not be further than 6 feet apart, whichever is closer, unless otherwise shown. All pipe supports shall be secured to structures by approved inserts or expansion shields and bolts.

E. All pipe shall be thoroughly cleaned internally before being installed. All pipes, except oxygen service, air and gas, shall be flushed with water and swabbed to assure removal of all foreign matter before installation. Air and gas piping shall be tapped with a hammer to loosen scale or other foreign matter that might be within the pipe, and

then thoroughly blown with a high pressure air hose. Furnish and maintain suitable air compressor.

F. Whenever possible, the pipe shall be installed with minimum 48-inches of cover. Deviations shall not be installed without written approval by the Owner.

G. Joints may only be opened to adjust alignment by half of the AWWA or manufacturer's recommended opening (which is smaller).

H. Tie Rods: Unless otherwise indicated on the drawings, the size and number of tie rods for a joint or installation shall be as recommended by the manufacturer's design chart for a working pressure of 150 psi. Tie rods shall be installed as recommended by the manufacturer.

3.0.2. EXCAVATION FOR PIPING

A. Refer to Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

3.0.3. INSTALLATION OF PIPE, FITTINGS AND VALVES

A. General:

1. The design drawings are in some cases diagrammatic. They may not show every bend, off-set, elbow or other fitting which may be required in the piping for installation in the space allotted.

2. The centerline of the pipe shall not vary by more than 2 inches from the location shown on the plans and the top of the pipe shall not vary by more than 2 inches from the established grade, except at points where this tolerance must be changed to clear obstructions, or make connections.

3. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, a continuous trough for the pipe barrel and recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of pipe.

4. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.

5. Any pipe found defective shall be immediately removed and replaced with sound pipe.

6. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

7. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

8. Lines shall be laid straight and depth of cover shall be maintained as shown on the Plans. Grades or pipe centerline elevations are shown on the Plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken on each length of pipe and recorded. No abrupt changes in direction or grade will be allowed.

9. The pipe and fittings shall be restrained at reaction points and at any point shown on the Plans or as shown in City's Standard Details or as specified herein.

10. The pipe manufacturer shall instruct the Contractor on the making of restrained joints supplied as a part of the pipe and fitting purchase.

11. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be stored under cover and properly protected.

12. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

13. During laying operations, do not place tools, clothing, or other materials in the pipe.

14. When pipe laying is not in progress, close the ends of the installed pipe by placing a child-proof and vermin-proof plug.

15. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the Engineer prior to installation. If assembly is underwater, lubricant recommended by the manufacturer for underwater use is required.

16. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying and for lines of an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

17. Each individual length of pipe and each fitting shall be solidly and evenly bedded throughout its length on a prepared bed on the floor of the trench and not supported in position on blocks or wedges. Pipe shall only be laid when the two preceding lengths have been thoroughly embedded in place to prevent any movement or disturbance of the finished joint. Any pipe which is disturbed or found to be defective after laying shall be taken up and relaid or replaced.

18. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the Engineer, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

19. Cutting of pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

20. Mains shall be cleaned in accordance with Section 02505 "Cleaning and Testing."

21. All underground pipe shall be color coded as required by the Florida Administrative Code as specified in Section 15001 “Water Mains” and Section 15002 “Force Mains”.

22. **No request for additional compensation or Project time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the Work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the Work shall rest solely with the Contractor.**

23. Limit onsite pipe storage to a maximum of one week. Use unloading and installation procedures that avoid cracking of the lining. If necessary, use plastic sheet bulkheads to close pipe ends and keep cement-mortar lining moist. Deliver the pipe alongside the pipe laying access road over which the pipe trailer-tractors can travel under their own power. Place the pipe in the order in which it is to be installed and secure it from rolling. Sandbags may be used to support the pipe in the ditch but no pipe shall be laid on blocks, except by the written permission of the Engineer of Record. Do not move pipe by inserting any devices or pieces of equipment into the pipe barrel. Field repair linings damaged by unloading or installation procedures. Flanged joints, mechanical joints and push-on joints in cast iron pipe and fittings may be made under water.

B. Installation of Ductile Iron Pipe

1. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

2. Push-on, restrained push-on and mechanical joints in ductile cast iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with ANSI/AWWA C600 except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection.

3. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed, and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

4. Taps into ductile iron pipe for corporation stops shall be AWWA tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer.

    a. For Water Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

    b. For Sewage Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the lining on the inside of the pipe shall be repaired with ceramic epoxy joint compound in accordance with manufacturer's recommendations. The exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

5. Any work within the pipe shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired as recommended by the pipe manufacturer or the pipe section replaced as required by the Engineer.

6. Sandbags may be used to support the pipe in the trench, but no pipe shall be laid on blocks, except by the written permission of the Engineer.

7. Since some settling of the pipe may occur due to unfavorable ground conditions the Contractor shall exert every care in laying the pipe to the required grade. Prior to backfilling, the pipe grade and settlement shall be checked, and the Contractor shall correct any excessive deflections or high points in the line to the satisfaction of the Engineer and at no additional cost to the City.

8. Unless otherwise approved by the Engineer, the pipeline shall be cleaned at intervals not to exceed 30 lengths of pipe. Cleaning methods shall meet the Engineer's approval, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

9. Connections to existing mains shall be coordinated as required under Section 01110 "Special Project Requirements", 1.0.6. Connections to Existing Piping.

3.0.4. FIELD QUALITY CONTROL

A. All water mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. The test pressure for potable water mains shall be 150 psi. The test pressure for sewage force mains shall be 100 psi. Test Ductile Iron Pipe mains in accordance with ANSI/AWWA C600 latest edition once all backfill is in place and fully compacted, and after all thrust blocks have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the City as a condition precedent to the approval and acceptance of the system.

END OF SECTION

15100 VALVES – GENERAL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall provide all tools, supplies, materials, equipment, and labor necessary for furnishing, epoxy coating, installing, adjusting, and testing of all valves and appurtenant work, complete and operable, in accordance with the requirements of the Contract Documents. Where buried valves are shown, the Contractor shall furnish and install valve boxes to grade, with covers, extensions, and position indicators.

B. The provisions of this Section shall apply to all valves and valve operators specified in the various sections of these specifications except where otherwise specified in the Contract Documents. Valves and operators in particular locations may require a combination of units, sensors, limit switches, and controls specified in other sections of these specifications.

C. .All valves specified herein shall be furnished with an affidavit from the manufacturer(s) certifying that the valves furnished comply with the applicable provisions of the AWWA specifications, as modified herein. That they were factory tested in accordance with the AWWA Standard Leakage and Hydrostatic Tests as modified herein, with a certified test report furnished to the Department for each valve

1.0.2. REFERENCE SPECIFICATION, CODE AND STANDARDS

A. Codes: All codes, as referenced herein, are specified in Section 01090 "Reference Standards."

B. Commercial Standards:

ANSI/AWWA C500	Standard for Metal-Seated Gate Valves for Water-Supply Service
ANSI B16.1 125,	Gray Iron Pipe Flanges and Flanged Fittings, Classes 25,
ANSI B16.5	Pipe Flanges and Flanged Fittings
ANSI/ASME B1.20.1	Pipe Threads General Purpose (Inch).
ANSI/ASME B31.1	Power Piping
ASTM A36	Specification for Carbon Structural Steel
ASTM A48	Specification for Gray Iron Castings

ASTM A126	Specification for Gray Iron Castings for Valves, Flanges, Pipe Fittings
ASTM A536	Specification for Ductile Iron Castings
ASTM B61	Specification for Steam or Valve Bronze Castings
ASTM B62	Specification for Composition Bronze or Ounce Metal Castings
ASTM B148	Specification for Aluminum Bronze Sand Castings
ASTM B584	Specification for Copper Alloy Sand Castings for General Applications
ANSI/AWWA C504	Rubber Sealed Butterfly Valves
AWWA C508	Swing Check Valves for Waterworks Service, 2 Inches Through 24 Inches NPS
ANSI/AWWA C509	Resilient Seated Gate Valves, for Water-Supply Service
AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants

1.0.3. SUBMITTALS

A. Shop Drawing: Shop drawings of all valves and operators including associated wiring diagrams and electrical data, shall be furnished as specified in Section 01300 "Submittals".

B. Valve Labeling: The Contractor shall submit a schedule of valves to be labeled indicating in each case the valve location and the proposed wording for the label.

C. Affidavit from the manufacturers certifying that the valves furnished for this Project comply with the most recent applicable provisions of the AWWA Standards as modified herein.

D. AWWA Standard Leakage and Hydrostatic Test factory test with certified test report for each valve.

E. "Pre-Approved Product List," shop drawings, test and compliance certifications of all valves.

1.0.4. QUALITY ASSURANCE

A. Valve Testing: Unless otherwise specified, each valve body shall be tested under a test pressure equal to twice its design water working pressure.

B. Bronze Parts: Unless otherwise specified, all interior bronze parts of valves shall conform to the requirements of ASTM B62.

PART 2 – PRODUCTS

2.0.1. VALVES

A. General: The Contractor shall furnish all valves, valve operating units, stem extensions, and other accessories as shown or specified. All valves shall be new and of current manufacture. Where buried, these valves shall be provided with valve boxes, covers and valve extensions.

B. All valves shall be products of domestic manufacturing firms, as per the City's Public Works Manual. The manufacturer shall have a minimum of five (5) years of experience in manufacturing valves of the sizes required for this project.

C. Valve bodies shall be epoxy coated cast iron conforming to ASTM A126, Grade B, ASTM A48, Class 40 or Ductile Iron ASTM A536, Grade 65 45 12. Where required to meet design operating conditions, valve bodies shall be manufactured of higher strength materials. Valve bodies shall have integral hubs for housing shaft bearings and seals'."

D. All castings shall be clean and sound, without defects of any kind and no plugging, welding or repairing of defects will be permitted. All bolt heads and nuts shall be hexagonal conforming to ANSI B18.2 and shall be type 316 American made stainless steel. Gaskets shall be full face and made of natural or synthetic elastomers in conformance with ANSI B16.21 suitable for the service characteristics, especially chemical compatibility and temperature. Nonferrous alloys of various types shall be used for parts of valves as specified. Where no definite specification is given, the material shall be the recognized acceptable standard for that particular application.

E. All buried valves shall be provided with valve boxes unless otherwise indicated. Valves boxes shall be as per Section 05550 "Castings"

F. All buried valves and other valves located below a concrete operating deck or level, specified or noted to be key operated, shall have an operator to finish grade or deck level, non-rising stem, a 2-inch square AWWA nut with skirt, and cover or box and cover, as may be required.

G. Protective Coating: Except where otherwise specified, ferrous surfaces, exclusive of American made stainless-steel surfaces, in the water passages of all valves 4 inch and larger, as well as the exterior surfaces of all submerged valves, shall receive a fusion bonded epoxy coating in accordance with AWWA C550. Flange faces of valves shall not be epoxy coated. The Contractor, through the valve manufacturer, shall

certify in writing that such coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these specifications.

H. Valves shall be furnished with operators, provided by the valve manufacturer. All operators of a given type shall be furnished by the same manufacturer. All valve operators, regardless of type, shall be installed, adjusted, and tested by the valve manufacturer at the manufacturing plant. Operator orientation shall be verified with the Engineer prior to installation.

I. All operators, unless otherwise specified, shall turn counter-clockwise to open. Operators shall have the open direction clearly and permanently marked. All valve operators, manual, motor and pneumatic, shall be provided with the valve by the valve manufacturer.

J. All butterfly valves shall have a torque guard installed.

K. Where buried, the valves shall have extensions with square nuts or floor stands.

PART 3 – EXECUTION

3.0.1. VALVE INSTALLATION

A. General: All valves , operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. Valves shall be firmly supported to avoid undue stresses on the pipe.

B. Access: All valves shall be installed to provide easy access for operation, removal, and maintenance and to avoid conflicts between valve operators and structural members.

C. General:

1. Resilient-seated gate valves shall be placed in vertical positions only. Horizontal placement of resilient-seated gate valves, even if supplied with bevel gearing, shall not be accepted.

2. The installation of all buried valves shall include a valve box and riser or manhole, as appropriate, in accordance with the City's Standard Details.

3. Riser pipes, valve boxes and manhole lids shall be carefully centered and set flush with the finished grade if in paving, or with the top of the ground if out of paved areas. All valve boxes shall be held in position with concrete as shown on the City Standard Details.

4. All valves shall be checked before installation to make sure they operate properly. All valves shall be thoroughly cleaned before installation, and during installation

they shall be carefully aligned vertically and/or horizontally as indicated on the Plans.

5. The Contractor is advised that he is required to furnish all labor, materials and equipment necessary to pressure test each valve furnished by the City, bi-directionally, prior to installation, to the satisfaction of the Engineer.

6. All mechanical joint ended valves shall be connected to the abutting pipe or fittings in accordance with the requirements of Section 15060 “Piping and Fittings”.

7. Upon completion of the Project, but prior to final acceptance, the Contractor in the presence of the Engineer, shall fully open each valve installed by him, except at connections to existing City mains. For valves 16-inch and larger, the Contractor shall count the number of turns required to operate each valve from a completely closed to a fully opened position, and shall paint the number on the bottom of the valve's valve box lid or manhole cover. **VALVES AT CONNECTIONS TO EXISTING CITY MAINS SHALL ONLY BE OPERATED BY CITY FORCES.**

8. Valves which are a part of the section of pipe being installed encased with polyethylene, shall also be encased with polyethylene in accordance with ANSI/AWWA C105/A21.5 Method A, B or C.

END OF SECTION

15102 TAPPING SLEEVES AND TAPPING VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install tapping sleeves and tapping valves, as shown on the Plans and/or as specified herein. All items not specifically mentioned in these specifications or noted on the Drawings, but which can be reasonably inferred as necessary to make a complete working installation, shall be included.

B. Tapping sleeves, where shown on the Plans, shall fit the existing pipe to be tapped and the Contractor shall determine the outside diameter and type of pipe before ordering the sleeve. Field verification of dimensions is directed since actual locations, distances and levels will be governed by actual conditions. The Contractor shall adjust his work to conform to said field conditions.

C. The Contractor is responsible for having the work properly scheduled, location excavated in accordance with Trench Safety requirements, pipe restrained, excavation dewatered and all conditions ready for the tap to be made.

1.0.2. RELATED WORK

Section 15100 “Valves, General”

Section 15120 “Gate Valves”

1.0.3. MANUFACTURE

A. All valves shall be the products of domestic manufacturing firms which have been regularly engaged in the production of valves for at least 5 years. All valves specified herein shall be tested at the factory in accordance with the AWWA Standard Leakage and Hydrostatic Test as modified herein and a certified test report shall be furnished for each valve upon request.

1.0.4. SUBMITTALS

A. Shop Drawings: Submit shop drawings for all tapping sleeves and valves not on Pre-Approved products List.

B. Complete technical data and information on tapping sleeves for pipe other than cast iron shall be submitted to the City for approval on an individual basis.

PART 2 – PRODUCTS

2.0.1. TAPPING SLEEVES

A. Tapping saddles approved for use by the City are shown on Sheet 6.0 Tapping Sleeves of the Pre-Approved Product List.

B. Tapping sleeves with MJ outlets to connect MJ gate valves shall be constructed of 316 stainless steel. This shall apply to both water and sewer applications unless otherwise approved by the City. These units shall be manufactured of AISI Type 316 stainless steel passivated after welding or Type 316L. Threaded fasteners shall be Type 316 and gasketing shall be Neoprene, EPDM, or Nitrile for sanitary sewer use and SBR for potable water. A standard resilient-seated gate valve shall be attached to the MJ outlet of the sleeve.

C. Cast Iron tapping sleeves shall be designed to withstand a working pressure of at least 150 psi. Cast iron tapping sleeves shall be used with a flanged tapping valve.

D. Full size taps (8-inch tap on an existing 8-inch main, 12-inch tap on an existing 12-inch, etc) main shall be made with a 316 stainless steel tapping MJ outlet sleeve. The inside diameter of the mechanical joint outlet fitting and branch shall be larger in diameter than nominal to allow the use of a full-size cutter.

E. Tapping saddles for concrete pipe sewer mains 42-inches and larger may use a fusion bonded epoxy carbon steel saddle with 316 stainless steel straps. Large diameter saddles shall be individually approved by the City on a case by case basis.

F. Each mechanical joint on the tapping sleeve shall be furnished complete with tee-head bolts and nuts complying with ANSI/AWWA C111/A21.11 "Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings" (latest edition). Tee-head bolts and hex nuts shall be of high strength cast iron. Bolts and nuts to join the two halves of the sleeve together shall be standard carbon steel, hex, or tee-head bolts and nuts which have been galvanized.

G. The tapping sleeves, including outlet flanges shall be as dimensioned and thicknesses shall be as required by AWWA/ANSI C110/A21.10. The tapping sleeves shall be mechanical joint ended, on the run, and shall have a connecting flange outlet, with centering groove (for all valves size 12-inch and below and for valves above 12-inch if available from the manufacturer), for connecting to the tapping valve. For tapping sleeves with outlets 12 inches and smaller, the connecting flange joint between the tapping sleeve and the tapping valve shall be in compliance with all applicable provisions of MSS Standard Practice SP60, latest revision, as developed and approved by the Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street N.E. Vienna, VA. 22180. For tapping sleeves with outlets larger than 12 inches, the connecting flange must provide a matching fit with tapping valves by other manufacturers.

H. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA

Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

I. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

J. The sleeves shall be suitable for use with ductile iron pipe conforming to ANSI/AWWA Standard C151/A21.51, "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids", with wall thickness and outside diameter as specified in Table 51.4 and 51.5. The sleeves shall also be suitable for use with other cast iron pipe with differing outside diameters and other types of pipe where required.

K. Each tapping sleeve shall be Factory Hydrostatically tested on pipe to verify proper fit and weld integrity with zero leakage.

2.0.2. TAPPING VALVE

A. Resilient-seated tapping valves shall have a mechanical joint outlet end conforming to ANSI/AWWA Standard C111/A21.11-00, "Rubber Gasket Joints of Ductile-iron and Gray-Iron Pressure Pipe and Fittings," for connection to new piping and a flange inlet with centering ring, for connecting to the tapping sleeve.

B. The tapping valves shall conform to the requirements listed for gate valves, including bypass valve when applicable, shall be furnished complete with all joint materials. Joint materials for the flanged inlet shall be ANSI-sized and approved and shall include a 1/8-inch thick full-faced neoprene gasket, and hot dipped galvanized carbon steel bolts and nuts with internal threads tapped or retapped after galvanizing. The flange inlet gaskets shall conform to the gasket material and property requirements set forth in ANSI/AWWA Standard C111/A21.11-00. All gaskets and seals shall be neoprene, Buna-N, or approved equal, but not natural rubber. The mechanical joint outlets shall include the necessary joint materials conforming to the requirements of joint materials for mechanical joint ended gate vales as specified in Section 5.07.3 "Valves - Resilient Seated Gate Valves." Bolt holes in the flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Resilient-seated tapping valves shall be as manufactured by U.S. Pipe and Foundry Co., American Flow Control, Mueller, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Taps 20-inches and smaller for water mains will be made by City forces. Taps of any size into concrete mains shall be done by a tapping specialist with credentials acceptable to the Department.

B. Taps of any size into concrete or PCCP water mains shall be made by a tapping specialist with credentials acceptable to the City.

C. Tap of any size to sewage force mains shall be made by a tapping specialist with credentials acceptable to the City.

D. The tapping specialist shall be from any of the following:

   1. EA Tapping Services

   2. Hydra-Stop, a division of ADS LLC.

   3. Rangeline Tapping Service, Inc.

   4. T.D.W. Services Inc.

   5. or approval equal

E. The Contractor shall notify the Engineer at least seven days in advance of when he will be ready to make the connection and shall have the tapping valve installed on the existing main with the new equipment satisfactory pressure tested and sufficient excavated work areas prepared for the City forces when they arrive to make the tap.

F. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized at design test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the Engineer, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap. No leakage shall be permitted at any joint in either the tapping sleeve/saddle or valve.

G. The tapping valve requires the installation of a cast iron riser pipe complete with valve box and cover, centered over the operator, and set in concrete.

H. All necessary sheeting, shoring, dewatering, excavation, backfill and compaction, surface repairs, and other items and work appurtenant to or incidental to the work shall be performed by the Contractor.

I. For Concrete mains the tapping saddle shall be tested after installation at a pressure of 5 psi lower than the operating pressure of the pipeline at the time of the test. A

pressure reading shall be taken from an air release valve prior to performing the pressure test on the saddle.

J. The Contractor shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. The test shall be conducted in the presence of the City's Inspector. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve.

K. When the invert of the tapping valve is under water, interlocking sheeting and tremie concrete shall be used, unless otherwise approved by the City. Seal the perimeter of all pipes passing through the sheeting below the water table. Only minimum seepage will be permitted. The cofferdam must be designed and sealed by a State of Florida, P.E. No work will be permitted within the cofferdam until it is demonstrated to the City to be dry. Approval to remove the initial water in the cofferdam must be obtained from the City and other governmental agencies jurisdiction over the work.

3.0.2. TAP BY CITY FORCES

A. The Contractor shall notify the City at least 48-hours in advance of when he will be ready to make the tap and shall have the tapping sleeve and valve installed on the existing main and satisfactorily tested as specified below, with a sufficient excavated work area prepared for the City forces when they arrive to make the tap.

B. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized to the required test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the City's Inspector, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap.

C. A crane or other suitable equipment as approved by the City, shall be furnished by the Contractor to unload the tapping machine, position it in the trench for bolting to the valve, and to reload it after the tapping operation has been completed.

D. City forces will connect the tapping machine to the valve, and disconnect it after the tap is complete; however, the Contractor shall furnish suitable devices or material to support the machine in the trench for proper alignment, as required by the City. The Contractor shall aid the City's forces whenever and to whatever extent necessary for the tapping operation to be performed efficiently and without any undue time lost.

3.0.3. TAPPING BY NON-CITY FORCES

A. The Contractor shall comply with all applicable provisions of Subsections 3.01 and 3.02, above, including installation and pressure testing of tapping sleeve and valve in the presence of the City's Inspector.

B. Since cutting equipment used for this type of installation is of a special design, the Contractor shall make provisions for furnishing a tapping specialist to perform actual tapping operation. The qualifications of the tapping specialist shall be forwarded to the City prior to any tapping work. The Contractor shall also furnish all incidental equipment necessary to operate the tapping machine and perform a complete operation to the satisfaction of the Engineer.

C. The tapping valve shall be installed in the horizontal position with the operator in the vertical position, and shall include a valve box cover. Tapping valves shall be left in the closed position.

D. All tapping operations shall be conducted under the direct supervision of the previously approved tapping specialist. All operations shall have prior approval of the City.

3.0.4. RECORD DRAWINGS

A. Record Drawings shall be prepared in accordance with Section 01720.

B. The location and elevation for each valve, tapping outlet, fitting, service line and other appurtenances along the pipeline shall be recorded by the Contractor's Florida Registered Surveyor and Mapper.

END OF SECTION

15120 GATE VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install gate valves complete and operable, including all appurtenances and accessories.

B. The City will permit the use of resilient seated type gate valves in potable water systems, as described herein

C. Gate valves shall be used on mains 3-inch diameter to 12-inch diameter

PART 2 – PRODUCTS

2.0.1. GATE VALVES, GENERAL

A. As used herein, "ANSI" denotes the American National Standards Institute; "AWWA" denotes the American Water Works Association; and "ASTM" denotes the American Society for Testing and Materials.

B. Gate valves 4-inch through 6 inch diameter shall be of the non-rising stem design, shall fully comply with the requirements of AWWA C509 for resilient-seated gate valves. Gate valves shall be designed for a minimum working pressure of 250 psi and a test pressure of 500 psi. Gate valves shall be manufactured by American, Mueller, or approved equal.

C. Gate valves shall have a disk on top of the operating nut, specifying number of turns and direction to open.

D. All work performed according to the standards cited above, except prototype testing, shall be subject to inspection and acceptance by the City or its representatives who shall have access to all places of manufacture where these valves are being produced and tested. Suppliers shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include Country, City, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

E. All valves shall conform with ANSI/NSF Standard 61, "Drinking Water System Components-Health Effects".

F. Grades B and C bronze as listed in Table 1 of AWWA C500, latest revision shall not be used in the fabrication of any of the various valve types listed in this specification. Aluminum bronzes, if used, shall not dealuminize and the method of preventing this shall be fully described in the submittal.

2.0.2. RESILIENT SEATED GATE VALVES

A. Resilient-seated gate valves shall be manufactured in accordance with the applicable provisions of ANSI/AWWA C509, "Resilient-Seated Gate Valves for Water Supply Service," latest revision, as modified herein.

B. All resilient-seated gate valves shall have nonrising stems (NRS) and are to be installed under buried and/or submerged conditions.

C. The design working water pressure for all resilient-seated gate valves shall be a minimum of 250 psig for all sizes. In addition to the pressure requirements, the valve assembly and mechanism shall be capable of withstanding an input torque of 200 ft-lbs for valves 4-inch and smaller, and 300 ft-lbs for valves 6-inch and larger.

D. With the valve open the unobstructed waterway shall have a diameter not less than the full nominal diameter of the valve.

E. All valves specified herein shall be furnished with an Affidavit of Compliance from the manufacturer as required by ANSI/AWWA C509. This Affidavit of Compliance shall state that the valve and all materials used in its construction conform to the applicable requirements of the standard under which the valve is manufactured and the City's specifications and that all tests specified in the applicable standard have been performed and all test requirements met. The manufacturer shall have been engaged in the production of valves for at least five (5) years.

F. Submit to the Engineer for approval:

1. Catalogue Data: Including illustrations and a parts list that identifies the materials used for various parts. The information shall be in sufficient detail to serve as a guide in the assembly and disassembly of the valve and for ordering repair parts.

2. Weight information: Provide a statement of the net assembled weight for each size of valve exclusive of joint accessories.

3. Assembly Drawings: One set of drawings showing the principal dimensions, construction details, and materials used for all parts of the valve.

G. Contractors shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include country, city, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

G. Valve Body:

1. Gate valve body and bonnet shall be cast iron conforming to ASTM A126, Class B with resilient seat gate and O-ring seals. The gate shall be cast iron with a vulcanized rubber coating with no metal to metal contact when in the fully closed position and a smooth unobstructed waterway when in the fully opened position.

2. All ferrous metal items in contact with the line fluids, except gray or ductile cast iron, shall be AISI Type 316 stainless steel. Valve body and bonnet gaskets shall be rubber or rubber composition, inorganic mineral fiber and paper are not acceptable. Rubber and rubber composition materials shall be suitable for use in water containing chlorine or chloramines and in sanitary sewage.

3. Valves shall be flanged or mechanical joint, with non-rising stems, and with a 2-inch square standard AWWA operating nuts unless otherwise specified or required by the City or designee.

H. External Ferrous Items:

1. All external ferrous items, except gray or ductile cast iron, shall be stainless steel.

2. All internal ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

I. Resilient Seats:

1. Shall be applied to the gate only and shall seat against a corrosion-resistant surface. The surface shall be nonmetallic, applied in a manner to withstand the action of line fluids and the operation of the sealing gate under long-term service and shall coat all surfaces in contact with the liquid. The nonmetallic surface interior surface coating shall conform with ANSI/AWWA C550. Resilient seats shall be bonded or mechanically attached to the gate. No natural rubber products will be acceptable. Seat materials shall be EPDM, Nitrile or approved equal and shall have excellent resistance to sewage combined with good to excellent resistance to compression set. The method used for bonding or vulcanizing the resilient seat material to its substrate shall be proven by ASTM D429, "Test Methods for Rubber Property-Adhesion to Rigid Substrates," Method A or B. For method A, the minimum strength shall not be less than 250 psi. When Method B is applicable, the peel strength shall not be less than 75 lb/in. All exposed mechanical attaching devices and hardware used to retain the resilient seat shall be of AISI Type 316 stainless steel.

J. Mechanical Joint Valves:

1. Shall have ends complying with ANSI/AWWA C111/A21.11. Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place with set screws will not be acceptable. Bolt holes in the flanges of the mechanical joint shall be equally

spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves for use in sewage shall have neoprene gaskets.

K. Painting and Coatings:

1. The exterior valve surface shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-494B. Paintings and coatings shall conform to the requirements of ANSI/AWWA C550 for the interior of the valve. Interior and exterior coatings shall conform with ANSI/AWWA C515, Section 4.5.2 "Coating."

L. Testing:

1. All production tests shall be performed on all valves supplied without exception. Operation, shell and seat tests shall be performed as specified in ANSI/AWWA C509.

PART 3 – EXECUTION

3.0.1. GENERAL

A. All valves shall be installed in accordance with provisions of Section 15095 “Vales, General.”

END OF SECTION

15125 PLUG VALVES

PART 1 – GENERAL

1.0.1. SCOPE

A. The Contractor shall furnish and install plug valves, complete and operable, as shown and specified herein, appurtenances, operators, and accessories.

B. Plug Valves 30-inch and larger shall have the actuator installed with a manhole structure. Space limitations may preclude full structures underground.

C. Plug valves are required for this project for the 30-inch force main. The substitution of plug valves with resilient-seated gate valves will not be accepted.

1.0.2. RELATED WORK SPECIFIED ELSEWHERE

A. Section 15100, “Valves, General”

1.0.3. QUALITY ASSURANCE

A. The plug valve manufacturer shall have a line of parts available to support the plug valve furnished to the City. Manufacturers with a history of unsatisfactory performance or discontinuing spare parts shall be disapproved.

PART 2 – PRODUCTS

2.0.1. PLUG VALVES

A. Plug valves shall be of the non-lubricated, eccentric seating plug type with synthetic rubber-faced plugs. All valves shall be provided with limit stops and rotate 90° from fully open to fully shut. The minimum working pressure for all valves shall be 150 psi for valves through 36-inch, and the test pressure shall be at least 270 psi for valves up through 12-inch and at least 230 psi for valves 14-inch and larger. Plug valves located at the discharge end of a pump station shall have a 100 percent port area. Plug valve 6- inch and smaller with an 80 percent minimum port area are acceptable only at locations away from lift stations. Plug valves 8-inch and larger shall be full opening with 100 percent port area. Plug valves, 8-inch and smaller shall be designed for operation in a horizontal pipeline with the valve shaft in a vertical position. Plug valves larger than 8- inch shall be designed for operation in a horizontal pipeline, with the valve shaft in a horizontal position and the operating shaft in a vertical position. The plug valves shall be as manufactured by DeZurik Company, Pratt, Kennedy, or equal as approved by the City, and shall be the standard product of a manufacturer which has produced and sold such equipment for a period of at least five (5) years. Valves shall be suitable for buried, submerged service

B. Mechanical joint buried plug valves shall have ends complying with ANSI/AWWA Standard C111. "Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings". Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place by set screws will not be acceptable. Bolt holes in flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves shall have neoprene gaskets. Plug valves shall be operated with a standard AWWA 2-inch square nut through a totally enclosed worm gear actuator

C. Plug valve body and plug shall be cast iron conforming to the requirements of ASTM Standard A126, “Gray Iron Castings for Valves, Flanges and Pipe Fittings”, Class B, and all nuts, bolts, springs, washers, and similar component items exposed to the operating fluid shall be AISI Type 316 stainless steel. Resilient plug facing shall be of neoprene.

D. Plug valves shall be furnished with a corrosion-resistant seat consisting of a welded-in overlay of high nickel content on all surfaces contacting the plug face and shall comply with ANSI/AWWA Standard C507, "Ball Valves, 6 In. Through 48 In. (150 mm Through 1200 mm)", Section 3.2.

E. Plug valves shall be furnished with replaceable, sleeve-type AISI Type 316 stainless steel bearings in the upper and lower journals, and shall comply with ANSI/AWWA Standard C507, Section 3.2.

F. Plug valve shaft seals shall be designed for replaceable, manually adjustable, multiple ring "V" or "U" type packing of Buna-N or neoprene. The valves shall be of the bolted-bonnet type and shall comply with ANSI/AWWA Standard C507, Section 3.

G. Plug valves shall have stops at the fully-opened and fully-closed positions.

H. Plug valves shall be designed for drip-tight shut-off in wet service applications at pressure differentials up the full rating of the valve with pressure in either direction. Plug valves shall be provided with a manual operator sized to suit the maximum differential pressure across the valves. Minimum plug valve operator output torques shall equal or exceed the values specified in the following table:

Plug Valve Size 150 PSI	Required Actuator 100 PSI	Output Torque
2’’	1,063 ft-lbs	1,438 ft-lbs
14’’	1,683 ft-lbs	2,225 ft-lbs
16’’	2,213 ft-lbs	3,013 ft-lbs
18’’	3,300 ft-lbs	4,500 ft-lbs
20’’	4,388 ft-lbs	5,975 ft-lbs
24’’ (100%)	10,000 ft-lbs	12,790 ft-lbs
30’’ (100%)	15,875 ft-lbs	19,550 ft-lbs

I. Manufacturer shall supply operators producing larger output torque values if so required by their valves, but in no case shall operator output torque be less than that shown for the particular valve size and pressure.

J. In addition, the operator shall be capable of withstanding an input torque of 300 ft.lbs. on the operating nuts or a pull of 200 pounds on the handwheel without damage to operator components between the input and the stops. Operators on valves 30-inch and larger shall also be equipped with an AWWA input shaft stop.

K. All external ferrous items, except cast iron, shall AISI Type 316 stainless steel. All internal and external ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

L. Manual operators for valves 8-inch and smaller shall be lever actuated unless otherwise specified elsewhere herein.

M. Manual operators for valves 10-inch to 24-inch shall be totally enclosed worm gear type, permanently lubricated, suitable for buried and/or submerged conditions.

N. Manual operators for valves 30-inch and larger shall be totally enclosed worm gear operators, permanently lubricated, suitable for buried and submerged operation, and shall in accordance with ANSI/AWWA Standard C504, with AWWA input shaft stop.

O. Manual operators shall be provided with completely enclosed mounting brackets or adapters. The operators shall be equipped with adjustable stops to prevent overtravel in both the open and closed position with standard 2-inch square operating nuts with skirts as listed elsewhere herein, or with handwheel if for above ground service. All plug valves shall open by turning the operating nut or handwheel counterclockwise. Orient operators with horizontal plug shafts such that the plug rotates upward upon opening.

P. All operator components between the operating nut and the adjustable stops shall be designed to withstand, without damage, an input torque of 300 ft. lbs.

Q. The exterior valve surfaces shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-434A.

R. Testing: Plug valves shall be tested in accordance with ANSI/AWWA C504, “AWWA Standard for Rubber-Seated Butterfly Valves”, Section 5, Subsection 5.2. The performance test (Subsec. 5.2.1) and hydrostatic test (Subsec. 5.2.3) shall be performed as stated, however the leakage test (Subsec. 5.2.2) shall be performed bidirectionally; first on one side of the valve, and then on the other. The manufacturer shall furnish a certified test report with every valve stating that the valve has met the requirements of the tests.

S. The manufacturer shall certify that the plug valves are capable of operating in continuous duty service under these pressures and flow conditions.

T. Each valve shall by hydrostatically tested and tested for bubble tightness after the operator has been mounted and adjusted. Copies of the hydrostatic and leakage test certification and certification of conformance shall be provided to the City or designee

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall install valves with seats on the downstream side and unless shown otherwise, set valve (above 8-inch size) with the main axis of the plug horizontal.

B. All valves shall be carefully inspected, fully opened and then tightly closed and the various nuts and bolts shall be tested for tightness before installation. Special care shall be taken to prevent any foreign matter from becoming lodged in or on the valve seat. Any valve that does not operate correctly shall be removed and replaced.

C. The installation of buried eccentric plug valves shall also include furnishing and installing concrete pads and ductile iron or PVC C900 riser pipes complete with valve boxes and covers set in concrete. Each valve operator shall be supplied with an extension shaft, nut and data plate supplied by the valve manufacturer which shall be supported as previously specified and shown on the Plans.

D. The one-piece extension shaft, complete with over-torque protection device, pinned AWWA 2-inch operator nut, coupling and coupling pin, and centering identification plate, shall be installed with the valve as shown in the City Standard Details. After the exact required length of the shaft has been determined by field measurements during the installation of the valve, the shaft shall be cut to size.

E. The coupling shall be welded to the sized shaft and installed to the valve operator shaft with coupling pin. All welds shall be cleaned and covered with Carboline, Inc. Bitumastic 50, or approved equal.

F. The centering identification plate, when installed, shall rest on top of the valve riser pipe as shown on the City Standard Details with the valve data information positioned on top.

G. For all quarter-turn plug valves installed, the Contractor shall paint the underside of the valve box cover with red paint.

END OF SECTION

15130 MISCELLANEOUS VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install miscellaneous valves as shown in the drawings and as specified herein, complete and operable including accessories and, where designated, operators, all in accordance with the requirements of the Contract Documents.

1.0.2. RELATED WORK

A. Section 15095 “Valves, General”.

PART 2 – PRODUCTS

2.0.1. AIR RELEASE VALVES

A. The air release valve and flushing valve assemblies shall be installed in accordance with the details shown in the City Standard Details.

B. Taps into ductile iron pipe for air release and flushing valve assemblies shall be AWWA Tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer. After the tap has been made, and the corporation stop installed on a pipe conveying potable water, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

For Water Mains - Air Release Valve Assemblies (ARVs):

1. The installation of air release valves shall include excavation, tapping the ductile iron pipe, corporation stop, angle valve, PVC pipe and fittings, complete with valve boxes and covers, set in concrete, backfilling and compaction, and all other appurtenant items and work in accordance with the City’s Standard Details.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene

For Sewage Mains – Automatic Air Release Valves (ARVs):

A. Sewage air release valves shall be specifically designed for use on Sewage Force Mains. Valves shall automatically release air gas or vapor under pressure during system operation, NO galvanized pipe allowed.

B. Automatic Air Release Valve Assemblies (AARVs):

1. The body of these valves shall be conical shaped to maintain maximum air gap with the spring-loaded float and seal plug connection combining to ensure no contact between the sewage and the seal.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene.

3. The body, cover flange, and lower flange shall be constructed of reinforced nylon, and shall have a funnel shaped lower body to automatically drain sewage back into the system.

4. All internal metal parts are to be made from corrosion resistant 316 stainless steel produced in America, with all operating parts, in the upper and lower sections, to be nonmetallic plastic/rubber materials.

5. The hinge for operation for the opening and closing of the seal on the orifice shall be made of EPDM rubber.

6. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials.

7. The lower bowl of the ARV shall be funnel shaped to assure the raw sewage to run back into the pipe.

8. All hardware shall be of stainless steel 316 produced in America bolts and nuts, and the entire valve, except to upper outlet, shall be constructed of reinforced nylon material.

9. All valves shall be equipped for backflushing maintenance with easy connection or disassembly.

10. Valves with a total weight of more than 10 pounds shall be anchored to relieve the excessive weight to the saddle and pipe. Those valves weighting less than 10 pounds will not be required to be anchored.

11. The ARV shall be no taller than 19-inches. The connection on all pipelines shall be the following sizing with an isolation valve of the same size:

NOMINAL PIPE DIAMETER (INCHES)	CONNECTION
8-inch and smaller	2-inch threaded

10-inch thru 16-inch	3-inch flangle/threaded
18-inch and larger	4-inch flange/threaded

12. All air and vacuum combination release valves shall be ARI Model D-025P, or approved equal.

13. Smith Blair 317 series stainless steel tapping saddle shall be used, or approved equal.

14. Size of valve shall be calculated to meet the required flow/design conditions.

2.0.2. PLASTIC BALL VALVE

A. Plastic ball valves shall be used at all PVC pipe installations where required, and be made of polyvinyl chloride (PVC). All valves shall have manual operators, unless otherwise specified or shown.

B. Construction: All plastic ball valves shall have union ends or flanged ends to ANSI B.16.5, class 150, for easy removal. The balls shall have full size ports and Teflon seats. All body seals, union O-ring seals, and stem seals shall be Viton. The valves shall be suitable for a maximum working non-shock pressure of 150 psi at a temperature of 105°F. Body, ball, and stem shall be PVC conforming to ASTM D1784, Type 1, Grade 1. Seats shall be Teflon. O-ring seals shall be Viton. Valve ends shall be of the double-union design. Ends shall be socket welded except where threaded or flanged-end valves are specifically shown in the drawings. Valves shall have handle for manual operation.

C. Suppliers or Equal: NIBCO Inc., (Chemtrol), Watts Regulator Company, ITT Engineered Valves.

2.0.3. GLOBE VALVES

A. The globe valves for pipe 3 inches and smaller shall be handwheel operated, shall have ends threaded to American Tapered Pipe Thread (NPT) Standard, shall be designed for 150-pound working pressure and shall be bronze body equal to Crane Company No. 1, Nibco Inc., or approved equal.

2.0.4. GATE VALVES (SMALL)

A. Gate valves, smaller than 3-inches in size, unless otherwise noted on the approved Plans, shall be minimum 125 psi, bronze body, double disc, rising stems with heavy duty bronze handwheels. Valve shall have a full bore able to allow passage of a drill of the nominal valve size and be used in place of a corp. stop for tapping the main. James Jones Co. Model J-372, Stockham, Bermaid or approved equal. Ends should be as shown or indicated on the Plans. Each valve shall open by turning the handwheel counterclockwise. Valves shall be designed for at least 125 psi working pressure.

Valves with reduced bores or appreciably lighter in weight than those specified will not be acceptable.

B. See Section 15120, "Gate Valves", for gate valves not specified above.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. All valves shall be installed in accordance with Section 15095 “Valves, General.” Care shall be taken that all valves in are well supported on each end of the valve.

B. Installation of both manual and automatic air release valves shall be in accordance with the Standard Details.

C. All valves shall be installed in accordance with the Standard Details and manufacturer’s recommendations.

D. All air and vacuum release valves installed in pump stations shall have piped outlets to the nearest drain, firmly supported, and installed in such a way as to avoid splashing and wetting of floors.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This Contractor shall furnish all labor, material and equipment required to construct water service installations, as specified herein.

1.0.2. RELATED SECTIONS

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service
Section 15203 - Water Meter Valves

1.0.3. LEAD FREE REQUIREMENT

A. It is a requirement that all components of water service installations be certified lead free. All brass components for water service installations shall comply with the S3874 amendment (Reduction of Lead in Drinking Water Act) to Section 1417 of the Federal Safe Drinking Water Act.

B. All meters, meter accessories, copper pipe, brass pipe, fittings, corporation stops, saddles, washers, tailpieces, couplings and other appurtenant items used for water services shall be “NL” no lead Type for installation in the WASD system. Solders and flux shall contain no more than 0.2% lead.

C. All brass components shall be marked “NL” to indicate no lead.

D. All valves 2-inch and smaller shall conform to the No Lead, NL, requirement. Valves larger than 2-inches are exempt.

PART 2 – PRODUCTS

2.0.1. HDPE PIPE FOR SERVICES

A. All 2-inch high density polyethylene pipe used for services shall be IPS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 2.375-inches, minimum wall thickness of 0.264-inches, in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter". Pipe shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Pipe shall have a (natural) inner core with a blue colored outer shell. Pipe shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer

shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Pipe shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the pipe on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

B. All 1-inch high density polyethylene tubing used for services shall be CTS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 1.315-inches, minimum wall thickness of 0.125-inches, PE 3408, all in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Tubing". Tubing shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Tubing shall have a (natural) inner core with a blue colored outer shell. Tubing shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Tubing shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the tubing on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

C. All HDPE services require the use of a 10 gauge direct bury stranded copper blue tracer wire tapped every four feet with poly or duct tape for location purposes. The tracer wire shall be accessible at the meter box and connected to the corporation stop for continuity of the signal. The 10 AWG standard tracer wire shall have 0.030” HDPE insulation and measure 0.162” min O.D.

2.0.2. SERVICE TERMINAL FITTINGS

A. Single Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1” lock wing style valve, drilled for wire sealing, Cat. No. KV23-444W Ford Meter Box Co. or Cat. No. 14255, Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

B. Duel Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1" branch valve assembly, with Standard 7 ½ -in spacing between outlet centers, drilled for wire sealing, Cat. No. UV23-42W Ford Meter Box Co. or 1-in branch connection with Standard 7 ½ in spacing between outlet centers Cat. No. H-15362, fitted with angle stops for 5/8 inch meters, drilled for wire sealing, Cat. No. H-14265, (3/4' Inlet) Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

2.0.3. CASINGS FOR TORPEDO INSTALLATIONS

A. Provide a PVC Schedule 40 casing or black steel pipe casing one inch in diameter larger than the service pipe when the service is installed with the use of a torpedo. When the service is installed by the direct bury method, no casing is required.

2.0.4. BRASS FITTINGS AND VALVES

A. All brass components shall be marked "NL" to indicate no lead.

B. Angle Key Meter Valves – Ford Meter Box Company KV-444W, Mueller or approved equal.

C. Brass Fittings – Merrit Brass or approved equal

D. Pack Joint, Swivel Nut – A.Y. McDonald Model 4761-22

E. Ball Corporation Stop – Ford Meter Box Company FB800, Mueller H-10003 or approved equal.

PART 3 – EXECUTION

3.0.4. INSTALLATION OF SERVICES

A. Services from the new water mains shall consist of corporation stops, HDPE or copper tubing and terminal fittings as shown in the Standard Details. All service installations from the new main shall be installed by the Contractor. Service installations from existing mains, if required, will be installed by Department forces, and the cost for materials and labor furnished by the Department shall be borne by the Contractor.

B. Where possible, all meter boxes shall be installed in non-traffic and non-parking areas.

C. Where meter boxes are located in existing sidewalks, the whole flag of sidewalk shall be removed and replaced with new concrete. The concrete walk shall be 4 inches thick

and finished with the proper tools and techniques to resemble the existing walk. The concrete support for meter boxes shall be eliminated when the box is installed in an existing sidewalk. Where meter boxes are located out of sidewalk areas, a concrete support is required. Concrete supports shall be to the established line and grade.

D. Meter boxes shall be set flush with the finished grade if in sidewalks, or flush with the top of the ground if out of sidewalk areas. E. All bends in copper tubing shall be made with an approved type tube bender to the satisfaction of the Department. Flattened, out of round or kinked tubing will not be permitted.

E. One inch service connections shall be one of the following:

1. Short Single - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter, to the meter installation approximately 2 ½ feet from property line. Single meter box installation included.

2. 2. Long Single - Same as above but from a main on the opposite side of the street from the proposed meter.

3. Short Dual - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter to the meter installation, approximately 2 ½ feet from the property line and branched off to serve an additional customer. Dual meter box installation included.

4. Long Dual - Same as above but from a main on the opposite side of the street from the proposed.

F. If PVC or black steel casing pipe for services crossing existing pavement is required, the pipe may be driven from the side of the street which affords the most room for the driving trench, thus resulting in the least number of couplings in the casing. Extra care shall be used in leveling and heading the first length of casing in the proper direction. One method of driving casing, known to work in this area and offered here as a suggestion, is to use an ordinary coupling screwed on the leading end of the casing as a cutting edge, and driving against a coupling screwed on the tailing end with a special tool in a pneumatic hammer, while maintaining a steady pull forward on the hammer with a small winch. Each length of casing as driven shall be cleaned out with compressed air introduced through a one-half-inch pipe at least as long as the casing. The purpose of driving casing pipe is to make it unnecessary to repair paving over one-inch service cuts. Should the Contractor elect to open-trench any one-inch service line across pavement, he will be required to repair the paving.

G. The Contractor shall install the meter box, 1-inch branch assembly, 30 inch tailpieces and perforated spacers.

H. When installing services the Contractor shall temporarily plug the ends of the tail pieces for protection against dirt.

I. Pipe bedding and the backfill material to at least 6 inches above the crown of the copper tubing shall be clean white masonry sand. Backfilling and compaction of material lying above a point 6 inches above the crown of the tubing and below the surface of the ground shall be as specified in Section 02315, "Trenching and Backfilling for Piping Systems".

J. Department forces will install the meters into the boxes installed by the Contractor.

END OF SECTION

PART 1 – GENERAL

1.0.4. SCOPE OF WORK

A. The Contractor shall furnish and install all concrete meter boxes, lids, sectional plates and precast vaults required for a complete installation.

B. All concrete meter boxes, sectional plates and vaults shall be in accordance with the Department's Standard Details and as specified herein.

PART 2 – PRODUCTS

2.0.1. GENERAL

All materials used in the production of the concrete meter boxes, lids sectional plates and vaults shall be new and or recent manufacture. Aggregates shall not originate in salt or brackish water areas and no calcium chloride containing admixtures shall be used.

2.0.2. FINE AGGREGATE

Fine aggregate for concrete mixes shall consist of sand or stone screening, composed of hard durable grains, free of foreign matter such as loam, clay, dirt, organic matter or other impurities. Fine aggregate shall conform to the following gradation requirements:

Size Sieve	Percent Passing
3/8"	100
No. 4	90 to 100
No. 8	70 to 95
No. 16	50 to 85
No. 30	30 to 70
No. 50	10 to 45
No. 100	0 to 10

2.0.3. COARSE AGGREGATE

A. Coarse aggregate for concrete mixes shall consist of gravel, broken stone or local limerock.

B. Coarse aggregate shall be hard, durable and free of foreign matter such as loam, clay, dirt, organic matter or other impurities. It shall be free of adherent coatings. Coarse aggregate shall conform to the following gradation requirements:

1. Meter Boxes, Lids and Sectional Plates

Size Sieve	Percent Passing

3/4"	100
1/2"	90 to 100
3/8"	40 to 70
No. 4	0 to 15
No. 8	0 to 5

2. Vaults

Size Sieve	Percent Passing
1-1/2"	100
1"	95 to 100
1/2"	25 to 60
No. 4	0 to 10
No. 8	0 to 6

2.0.4. CEMENT

A. Cement shall be a standard brand of Portland cement meeting the requirements of ASTM C150-86, "Portland Cement", Type I.

B. Different brands of cement, even if tested and approved, shall not be mixed during use.

2.0.5. REINFORCING STEEL

A. General: All reinforcing steel shall be free of rust, grease, dirt or mortar and shall be thoroughly cleaned of any such foreign matter or loose mill scale before being placed in position.

B. Wire reinforcement shall conform to ASTM A82, "Steel Wire, Plain, for Concrete Reinforcement".

C. Wire mesh reinforcement shall conform to ASTM A185, "Steel Welded Wire, Fabric, Plain for Concrete Reinforcement".

D. Bar reinforcement shall conform to ASTM A615-7a, "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement", Grade 60, deformed, except that steel manufactured by the Bessemer process will not be accepted.

2.0.6. WATER

Water used in mixing concrete that is not in the form of surface moisture on the aggregate shall be from the Department's water supply or other approved source.

PART 3 – EXECUTION

3.0.2. MANUFACTURE

A. General

All concrete meter boxes, lids, sectional plates and vaults shall be manufactured in accordance with the applicable provisions of ASTM C858, "Underground Precast Concrete Utility Structures", as modified herein.

B. Forms

1. The Forms shall be made from of a non-porous material with smooth surfaces and shall be accurate and strong enough to maintain the structure's dimensions within one half of the allowable tolerances given in Section 3.4 of ASTM C858

2. The precast sections for 4' x 4' vaults shall be constructed with a threaded metal insert in accordance with Standard Detail No. WS 2.20, Sheet 1 of 2, contained herein. Also, each section shall be furnished with a corner bolt.

F. Cleaning and Oiling: Forms shall be cleaned before each use, and shall be free of paint or other protective coatings that might cling to the surface of the concrete. Releasing agents applied to the form to aid in breaking the bond shall not be injurious to the concrete.

G. Reinforcement: Steel reinforcing shall be securely positioned in the form to maintain the concrete cover shown on the Standard Details.

H. Mixture

1. The aggregates shall be sized, graded, proportioned and thoroughly mixed in a batch mixer with proportions of cement and water that will produce a homogeneous concrete having a compressive strength of 3500 psi at 28 days of age for the boxes and plates and 3000 psi for the vaults after the same curing period.

2. Batched concrete shall be made in standard concrete mixers only, and not in mortar boxes, wheelbarrows or similar equipment.

3. Mixers shall be standard mechanical (power-driven) rotary type for concrete. Mixers normally used for mortar or plaster mixing will not be permitted.

I. Concrete Placement

1. Concrete shall be placed either by gravity into the form at a rate such that the concrete is plastic at all times and flows readily into all parts of the form and around all reinforcement steel without segregation of materials, or by highspeed pneumatic rammer resulting in sense, evenly compacted concrete without disturbing the reinforcement. The surfaces from top to bottom shall show uniform compaction.

2. The top surface of the molded items shall be flat and finished smooth while in the mold. Capping will not be permitted. Where required by the Department, corners shall be rounded.

J. Curing: Curing shall be by any method or combination of methods that will develop the required compressive strength within 28 days or less.

K. Repairs: The precast units may not be repaired without specific approval by the Department. I. Inspection: The quality of materials, manufacturing process, and the finished units shall be subject to inspection at any time by the Department, and the supplier shall afford access for this purpose, if so required.

3.0.3. CERTIFICATION

Prior to installation of any of the above mentioned units, the Contractor shall furnished the Engineer, upon his required, with a statement giving the following information:

A. Name of manufacturer.

B. The source and type of cement.

C. The source and specific gravities of the aggregates.

D. The concrete mix proportions, and strength at 28 days.

E. Name of admixtures, if any.

F. Mill certificates for the reinforcement steel.

G. Source of water.

3.0.4. REJECTION

The Precast units shall be subject to reject, either at the manufacturing plant or at delivery, upon failure to conform to any of the specified requirements herein. The following imperfections shall also be cause for rejection:

A. Defects that indicate any imperfect concrete mixing and molding.

B. Surface defects such as honey-combed or open textured and damaged area which would affect the structural adequacy.

C. Repaired areas or capping.

D. Improper radius at corners or improper tolerances.

END OF SECTION

15203 WATER METER VALVES

PART 1 – GENERAL

1.0.6. SCOPE OF WORK

This Contractor shall furnish meter valve and accessories for cold water displacement meters (to be furnished and installed by the Department) and shall supply all labor, material and equipment necessary for a satisfactory installation.

1.0.7. RELATED SECTION

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service

PART 2 – PRODUCTS

2.0.1. METER VALVE ASSEMBLY

A. Meter valves (inlet side of meter) for single meter box installations, including single meter boxes for multi-story buildings, shall be the lock wing type with coupling nut drilled for wire seal. The inlet end of the valve shall be for 1-inch copper tubing as specified herein, and the outlet end (coupling nut) shall connect to a 1-inch meter. The valves shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Angle Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Angle Meter Stop, No. H-14255

B. Meter valves (outlet side of meter) for single meter boxes (multi-story building) shall be the plain type with coupling nut drilled for wire seal. The inlet end of the valves (coupling nut) shall be for 1-inch copper tubing as specified herein, and the outlet end shall connect to a 1-inch meter. The valves shall be as manufactured by the following or approved equal:

Ford Meter Box. - Straight Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Straight Inverted Key Meter Valves, No. H-14348

C. Meter branch valve assemblies (inlet side of meter) with standard 7-1/2 inch spacing for dual meter boxes (two 5/8-inch water meters) shall be lock-wing types with coupling nuts drilled for wire seal. The inlet side of the branch valve assembly shall be for 1-inch copper tubing as specified herein, and the outlet side (coupling nut) shall connect to a 5/8-inch by 3/4-inch meter. The branch valve assembly shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Branch Valve Assemblies, No. UV23-42WW

or
Mueller Co. - "U" branch connection No. H-15362 with 7-1/2 inch spacing, 3/4 I.P. male thread (outlet) and inlet for 1-inch copper tubing
and
Mueller Co. – Angle meter stops No. H-14265 with 3/4-inch I.P. female thread (inlet), and coupling nut (outlet) for 5/8-inch by 3/4- inch meter and drilled for wire seal.

END OF SECTION

15330 FIRE HYDRANTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install approved fire hydrants and accessories in accordance with the requirements of this Section.

B. Where a new larger main or mains are installed as a part of the work, existing fire hydrants fed by smaller mains shall be connected to the larger main to provide maximum fire flow capability. Such re-connection shall automatically be designed by the Engineer of Record and become part of the plans and project work unless otherwise permitted by the City in writing.

1.0.2. QUALITY ASSURANCE

A. Codes: Fire hydrants shall conform with the requirements of ANSI/AWWA Standard C502, "Dry Barrel Fire Hydrants" (latest edition), as modified herein; the Miami-Dade County Fire Flow Ordinance and the Miami-Dade County Fire Department. Hydrants installed within the limits of the City of Miami shall conform to that fire department's standards.

B. Manufacturer: The hydrants shall be the standard product of a manufacturing firm which has been engaged in the production of fire hydrants for a period of at least five years.

1.0.3. INFORMATION TO BE FURNISHED BY BIDDER

A. The Contractor shall furnish four (4) sets of shop drawings for approval showing all the essential features including arrangement and descriptions of parts of the equipment offered.

PART 2 – PRODUCTS

2.0.1. APPROVED HYDRANTS

The fire hydrants shall be one (1) of the following models approved by the Miami-Dade County Fire Department:

	Model	Manufacturer
1.	A 423 Centurion	Mueller Company
2.	K81-MD (per Kennedy Drawing No. 80783 MD, Rev. 05)	Kennedy Valve
3.	Medallion #F2545	Clow Valve
4.	5-¼" B-84-B	American-Darling Co.

2.0.2. HYDRANT CHARACTERISTICS

The hydrants shall have the following features:

A. All hydrants shall meet the flow requirements of Section 2-103.21(B), Metropolitan Dade County Code. A certification for compliance with this standard must be available if requested.

B. Type of shutoff shall be compression type closing, with the line pressure, and a minimum 5- 1/4-inch valve opening.

C. Barrels - Upper barrel with breakaway-from-lower-barrel feature shall be designed with a breakable safety connection of the flange and collar bolt-connected type joining the two barrels together. Lower barrel shall be of the same material as the hydrant shoe (inlet connection), and shall be designed so that the barrel can be removed from the hydrant shoe when the shoe (and valve) are under pressure. The drain outlets normally provided shall be omitted.

D. Main valve stem - Upper stem shall have breakaway-from-lower-stem feature. Top of the lower stem shall be below the top of the lower barrel to prevent a vehicle tire from depressing the stem and opening the valve, or damaging both lower stem and lower barrel. Stem and seat removal shall be easily accomplished from the upper part of the lower barrel or the upper barrel.

E. Main valve seat ring shall be bronze threaded into a fixed bronze bushing and shall be equipped with upper and lower O-ring seals, the lower of which shall seal against the hydrant elbow.

F. Sealed lubricant reservoir shall provide lubrication to all threaded and bearing surfaces automatically, and shall be located in the bonnet. All hydrants shall be supplied with factory pre-lubrication.

G. Inlet connection - Side inlet, 6-inch mechanical joint.

H. Delivery classification - Two (2) hose and one (1) pump nozzle 18 inches above ground (bury line).

I. Hose and pumper nozzles - Threaded, with O-ring seal, and the nozzle retained by stainless steel screws, or a left hand thread lug, slot and pipe plug lock system.

Hose nozzle diameter shall be 2-1/2 inches, and threads shall be in accordance with American National Standard.

Pumper nozzle (City of Miami Standard) shall be 4-inch inside diameter, 4 and 47/64-inch outside diameter of threads, 7 threads per inch, 0.143-inch pitch, right hand, V-form threads.

Pumper nozzle (Dade County Standard) shall have 4 and ½-inch diameter threads conforming to American National Standard.

J. Bury length shall be as shown on the Plans or specified elsewhere herein.

K. Operating and cap nuts (City of Miami Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/8 inch point to flat, with operating nut weather cap.

Operating and cap nuts (Dade County Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/2 inch point to flat, with operating nut weather cap.

L. Stuffing box - O-ring pressure seal.

M. Direction to open shall be counterclockwise.

N. Markings - Hydrants shall be cast marked or outside design shall be such that visible identification can be made as to manufacturer model (type). In addition, all hydrants approved as a "special" or "modified" hydrant shall be cast marked "Dade County, Florida".

O. Color shall be chrome yellow.

P. Harnessing lugs and nozzle cap gaskets will not be required.

Q. Nozzle cap chains will not be required on the "Dade County Standard" hydrants; however, they will be required on the "City of Miami Standard" hydrants.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. Six-inch branch runs to the fire hydrant shall be constructed in accordance with all applicable portions of Section 15060 "Piping and Fittings", including making thrust resistant joints, installing 6-inch gate valve, tie-rods, riser pipe and valve boxes. Where the distance of any branch run from the main shall be fifty feet or greater, it shall be constructed with 8-inch diameter piping.

B. New fire hydrants and branch runs shall be installed by the Contractor where shown on the Plans and in accordance with the Standard Details herein. Installation of a new fire hydrant shall include excavation, installation of the branch run, installation of the hydrant on the branch run, the concrete anchor at the hydrant elbow, protective concrete slab in nonsidewalk areas, replacing concrete sidewalk when in sidewalk area; steel posts filled with concrete, where required; plastic warning posts where required in FDOT right of way; backfilling and compaction. Fire hydrants shall be touched up or repainted with yellow paint, as specified, where necessary, and the same type of paint shall be used to paint the guard posts after treating the galvanized surface with a neutralizer.

C. Some fire hydrants are factory lubricated, while others require lubrication after installation. The Contractor shall verify which type of hydrant has been furnished hereunder with the Engineer, and if required, shall lubricate each hydrant after its installation and prior to its operation.

D. Lubricating hydrants will be considered as incidental to the hydrant installation, and no

extra compensation will be provided for this work. Where existing fire hydrants are removed they shall be cleaned and returned to the City of Opa-Locka Public Works Department storage yard(s), as directed by the City.

E. Fire hydrants being retired shall be salvaged by excavating the entire hydrant assembly including the bottom shoe. Using caution so as not to damage any component of the hydrant assembly, remove the entire hydrant assembly including the shoe, carefully clean of any thrust block concrete, clean, load, transport, unload and store in a Department storage yard as directed by the Engineer. Fire hydrant feed mains shall be cut, plugged and thrust blocked if they are to remain connected to an active main line. Lines which are deactivated (ie not connected to an active main) shall be abandoned or removed as called for on the Plans.

F. Unless otherwise objected by the local municipality or governing agency having jurisdiction over the work, the Contractor shall furnish and install concrete-filled steel guard post in accordance with the Standard Details.

END OF SECTION

15995 DISINFECTION OF WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish the necessary labor, equipment, and material to flush, clean and disinfect sections of water main and fittings as applicable to this project.

1.0.2. RELATED SECTION

A. Section 02505 “Cleaning and Testing of Main”.

1.0.3. QUALITY ASSURANCE

A. All water main pipelines shall be disinfected after they have been pressure tested and while still full of water, as specified in AWWA standard C651 latest revision and Miami-Dade County Health Department procedures.

PART 2 – PRODUCTS

2.0.1. Liquid Chlorine, available from local sources.

2.0.2. Calcium hypochlorite, HTH, Perchloron, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall clean, flush and disinfect every piece of pipe, fitting and valve in accordance with these specifications and to the satisfaction of the City.

B. Liquid chlorine is available locally and shall be purchased by the Contractor.

3.0.2. DISINFECTION

A. The pipelines shall be disinfected after they have been pressure tested and while still full of water.

B. A suitable chlorinator shall be used to inject chlorine into the lines. All connections required for the introduction of chlorine into the water lines shall be made by the Contractor. Chlorine and water shall be introduced at one end and shall be allowed to flow slowly through the lines to the other end where it shall be removed and disposed of at the Contractor’s expenses. Several points of introduction and removal of chlorine solution may have to be employed to get an even distribution through the entire section being disinfected.

C. The quantity of chlorine introduced shall be such as to ensure a concentration of at least 50 parts per million in the water flowing from the line.

D. The chlorine solution shall be allowed to stand in the line for at least 24 hours or longer, if required, to destroy all harmful bacteria. At the end of the required time, the concentration of chlorine in all parts of the section shall be at least 25 ppm.

E. All valves and appurtenances in the section shall be operated at least once during the above period. After the required period, the treated water shall be thoroughly flushed from the section and the system filled with potable water.

F. The Contractor shall be responsible for coordination with Miami-Dade County Department of Health, who shall collect and test samples from main. The Contractor shall provide assistance to the Dept. of Health for the collection of samples. The samples shall be taken from each main or section of main to be placed in service where designated by the Dept. of Health. The samples must be approved by the Department of Health before the main is placed in service.

G. The Contractor shall be responsible for any rechlorination, retesting and fees that may be required until the Department of Health's approval is obtained. The Contractor shall be responsible for the disposal of all water flushed from the system and shall safeguard all adjoining properties from damage from flooding. The Contractor shall exercise due care in the protection of private property from water damage due to his operations. In addition, the Contractor shall assume complete liability for any damage which was directly or in-directly caused by his operations.

H. All of the connections shall be disinfected by the Contractor.

I. The inside of each pipe and fitting laid by the Contractor in connecting to existing mains which are isolated from the main by valves shall be swabbed with calcium hypochlorite, HTH, Perchloron, or approved equal, mixed in solution with water. The quantity of hypochlorite shall in all cases be subject to the approval of the City of Opa-Locka Public Works Department, whose representative shall be present at all times while this phase of the work is in progress.

J. Wherever practicable, water from the existing mains flowing through the disinfected connections shall be used in disinfecting the main line in order that the hypochlorite may be removed to the greatest extent possible. In other cases, the water from the disinfected connections shall be removed by allowing it to flow into the main line as it is being drained.

K. No pipe shall be placed in service until it has been disinfected as approved by the Engineering Division City of Opa-Locka and certified by the Department of Health including certified as-built drawings accepted by the City.

END OF SECTION

END OF TECHNICAL SPECIFICATIONS

PART III
PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this ITB.

3-2 MINIMUM SUBMISSION REQUIREMENTS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents
Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal

3.2.3.1 Limit to one or two pages.

3.2.3.2 Briefly state the Proposer's understanding of the work to be done and make a positive commitment to perform the work.

3.2.3.3 Give the names of the persons who will be authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3.2.3.4 Provide an official signature of a Corporate Officer certifying the contents of the Proposer's responses to the City's Request for Proposal.

3.2.4 Tab 3 - General Information

3.2.4.1 Name of Business.

3.2.4.2 Mailing Address and Phone Number.

3.2.4.3 Names and contact information of persons to be contacted for information or services if different from name of person in charge.

3.2.4.4 Normal business hours.

3.2.4.5 State if business is local, national, or international and indicate the business legal status (corporation, partnership, etc.).

3.2.4.6 Give the date business was organized and/or incorporated, and where.

3.2.4.7 Give the location of the office from which the work is to be done and the number of professional staff employees at that office.

3.2.4.8 Indicate whether the business is a parent or subsidiary in a group of firms/ agencies. If it is, please state the name of the parent company.

3.2.4.9 State if the business is licensed, permitted and/or certified to do business in the State of Florida and attach copies of all such licenses issued to the business entity.

3.2.5 Tab 4 – Project Approach

Describe in detail the proposal to fulfill the requirements of the scope of services listed in Part II of this ITB.

3.2.6 Tab 5 – Experience and Qualifications

3.2.6.1 Specify the number of years the Proposer has been in business.

3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this ITB as listed in section 2-2 of the Scope of Services.

3.2.7 Tab 6 – Schedule

3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Program.

3.2.7.2 Indicate the earliest available start date for Proposer's project team.

3.2.7.3 Indicate the project completion date based on the date provided in 3.2.7.1.

3.2.8 Tab 7 – Pricing of Services

3.2.8.1 The fee basis should be based on the Pricing Proposal (Page 12).

3.2.9 Tab 8 – References

3.2.9.1 List a minimum of three (3) references in Florida for which the Proposer has provided Vulnerability Assessment, Adaptions and Resiliency Plan Services. Include the name of the organization, brief description of the project, name of contact person telephone number and email address.

3.2.10 Tab 9 – Additional Forms

Proposers must complete and submit as part of its Proposal all the following forms and/or documents.

- Proposer Qualifications
- Certification regarding debarment and suspension
- Drug Free workplace certification
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verification

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY THE PROPOSER.

PART IV
EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee, consisting of City personnel, will convene, review, and discuss all proposals submitted. The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the ITB, including a detailed explanation of how the services shall be performed.

Each proposal will be reviewed to determine if the Proposal is responsive to the submission requirements outlined in the Solicitation. A responsive Proposal is one which follows the requirements of this Solicitation that includes all documents submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. The Contract (s) will be awarded to the most responsive Proposer whose Proposal best serves the interest of and represents the best value to the City of Opa-locka.

4-2 EVALUATION CRITERIA

The Committee may select and choose to invite any and/or or all firms to make presentations and be interviewed by the Committee as part of the evaluation process for this Solicitation. The Committee's decision will be communicated by staff to all Proposers. The Proposer's presentation may clarify but may not modify their submitted Proposal. Any discussion between the presenter and Evaluation Committee during presentations is intended only for purposes of providing clarification in response to questions from the Committee.

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee to clarify their proposals. Only those firms with the highest rated scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted, without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentation evaluation phase. References and site visits (if completed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this ITB, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated Agreement. The City's decisions will be final. Following the selection of firm, the expectation is that an Agreement will be executed between both parties. City staff will recommend the award to the responsible Proposer whose Proposal is determined to provide overall best value to the City, considering the evaluation factors in this ITB.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

The Proposer, MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. **Name and Title of Principal Officers** **Date Elected:**

   _____ _____

   _____ _____

   _____ _____

   _____ _____

6. The length of time in business:_____years

7. The length of time (continuous) in business as a service organization in Florida:
   _____years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka ITB during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by_____
(Name)

the _____ of_____
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

_____ _____
Date Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20____

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large My

commission expires:

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

CITY OF OPA-LOCKA

ITB NO: 24-TBA

INVITATION TO BID(ITB)
Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project

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02730 STORMWATER AREA DRAINS AND INLETS
02721 STORMWATER CURBSIDE DRAINS AND INLETS
02725 GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS
02730 STEEL GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS
02745 PAVEMENT REMOVAL AND REPLACEMENT
02765 PAVEMENT MARKINGS AND TRAFFIC SIGNS
02900 LANDSCAPING

DIVISION 3 – CONCRETE

03300 CAST-IN-PLACE CONCRETE, REINFORCING AND FORMWORK
03360 GROUT
03400 PRECAST PRESTRESSED CONCRETE

DIVISION 5 – METALS

05520 ALUMINUM RAILING

05550 CASTINGS

DIVISION 10 – SPECIALTY CONSTRUCTION

10001 STORMSAFE VAULT TREATMENT STRUCTURE

10001 STORMSACK PLUS

DIVISION 15 – MECHANICAL

15000 BASIC MECHANICAL REQUIREMENTS

15001 WATER MAINS

15002 FORCE MAINS

15005 PVC C900 WATER MAIN

15023 CODE AND STANDARDS

15060 PIPING AND FITTINGS

15100 VALVES – GENERAL

15102 TAPPING SLEEVES AND TAPPING VALVES

15120 GATE VALVES

15125 PLUG VALVES

15130 MISCELLANEOUS VALVES

15201 WATER SERVICE INSTALLATIONS

15202 METER BOXES, SECTIONAL PLATES AND VAULTS FOR WATER SERVICE

15203 WATER METER VALVES

15330 FIRE HYDRANTS

15995 DISINFECTION OF WATER MAINS

DIVISION 16 – (NOT USED

ITB NO: 24-TBA

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

Sealed Proposals for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project will be received by the City of Opa-locka at the Office of the City Clerk, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, by 2:00 p.m., TBA (ET). Any ITB Package received after the designated closing time will be returned unopened. The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk

780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked ITB for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project.

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that proposer whose proposal best complies with the **ITB NO: 24-TBA** requirements. Proposers may not withdraw their proposal for a period of ninety (90) days from the date set for the opening thereof.

City Clerk
Joanna Flores, CMC

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka is requesting proposals from qualified professional firms to provide Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project with the terms, conditions, and specifications contained in this Invitation to Bid (ITB).

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 pm (ET) on TBA. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: ITB NO. 24-TBA – Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project. This package shall also include the Proposer's return address.

Proposers may withdraw their proposals by notifying the City in writing at any time prior to the deadline for proposal submittal. After the deadline, the proposal will constitute an irrevocable offer, for a period of 90 days. Once opened, proposals become a record of the CITY and will not be returned to the Proposer.

The City cautions proposers to ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611, Option 1, before the proposal closing time. Any proposal received after the established deadline will not be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an original and six (6) copies (a total of 7) plus one copy on USB Flash Drive in PDF format of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail, or any other mode of delivery.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the ITB.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the ITB until eight (8) days prior to the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the ITB so that they may read and interpret such for themselves. No employee other than the City's Purchasing

Officer is authorized to interpret any portion of this ITB or give information as to the requirements of the ITB in addition to what is contained in the written ITB document.

1-6. Addenda: The City may record its response to inquiries and any supplemental instructions in the form of written addenda. The City may post addenda on the City's website up to five (5) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the ITB opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Purchasing Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this ITB does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed and evaluated by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties. The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re- advertise for other proposals.

1-8. Contractual Agreement: This ITB and Proposer proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. Any and all legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.

The successful proposer will be required to enter into an agreement with the City of Opa-Locka in a contract form substantially similar to the one attached hereto

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible.

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke the exemptions to disclosure provided by law in the response to the ITB and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this ITB or the service, study, or project to which it relates.
1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions. In the event the Proposer is a governmental entity or self-insured organization, different insurance requirements may apply. Misrepresentation of any material fact, whether intentional or not, regarding the Proposer's insurance coverage, policies or capabilities may be grounds for rejection of the proposal and rescission of any ensuing Agreement.

1-13. Licenses: Proposers, both corporate and individual, must be fully licensed and certified in the State of Florida at the time of ITB submittal. The proposal of any Proposer who is not fully licensed and certified shall be rejected.

1-14. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. No public entity shall award any contract to or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the ITB proposal forms, Proposer attests that they have not been placed on the "Convicted Vendor List".

1-15. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka, Miami-Dade County or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work, goods, or services for the City of Opa-locka.

1-16. Drug-Free Workplace: Preference shall be given to Proposers with Drug-Free Workplace (DFW) programs. Whenever two or more proposals which are equal with respect to price, quality, and service are received by the City for the procurement of commodities or contractual services, a proposal received from a Proposer that completes the attached DFW form certifying that it is a DFW shall be given preference in the award process.

1-17. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

1-18. Protests: Protests of the plans, specifications, and other requirements of the Request for Proposal and bids must be received in writing by the City Clerk's Office at least ten (10) working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-19. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances.

A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (ITB), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**
Release Date	TBA
Pre-Bid	NA
Written Questions Due	TBA @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "ITB No: Bid Questions"
Response to Questions	TBA @ 5:00pm (ET)
Due Date/Bid Opening	TBA @ 2:00 pm (ET)
Award Recommendation	TBA
Commission Approval	TBA
Post Award	TBA

TERM OF CONTRACT

The agreement shall commence upon final execution of the agreement by the City and the term will be for a one (1) year term.

PERFORMANCE SECURITY BOND

The Contractor shall provide and maintain performance security covering the faithful performance of the Contract including the corrections after completion and payment of all obligations arising under the Contract in the form of:

1. A performance bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price; and

2. A labor and materials payment bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price.

11.2.2 The performance bond and the labor and materials payment bond shall be written on a standard bond form, or on a form satisfactory to the City.
11.2.3 The Contractor shall provide the City with the required performance security before commencement of the Services or the Work."

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

TO THE COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA

Ladies and Gentlemen:

The undersigned bidder proposes to furnish all labor, tools, material and supplies, and to sustain all the expense incurred in doing the work set forth below that may be awarded the undersigned by the City of Opa-Locka, Florida, through its proper officers, and to do the same strictly in accordance with the plans and contract documents on file in the Office of the City Engineer of Opa-Locka, which are referred to below and made a part hereof, at the following combination of lump sum prices:

Item No.	Estimated Quantity	Description	Total
1.	Lump Sum (Divided into 2 or 4 payments See Measurement and Payment for Conditions)	For performing preparatory work and operations in mobilizing for beginning the work of the Project, but excluding materials and permit costs, both of which are paid under other payments items, the lump sum of _____ Dollars and _____ Cents	$_____
Water System Improvements			
2.	6 each	For furnishing and constructing Fire Hydrant Assemblies (FHs) for water main, per Standard Detail WS 4.50, at the locations shown on the Plans, complete, the price each of _____ Dollars and _____ Cents	$_____

Item No.	Estimated Quantity	Description	Total
3.	2 each	For demolishing damaged fire hydrant assemblies, the price per each of _____ Dollars and_____Cents	$_____
4.	38 each	For adjusting rim elevation of existing water meters to meet proposed grade and replace lid, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
5.	8 each	For adjusting rim elevation of existing water valves to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
6.	6 each	For adjusting rim elevation of existing water ARV's to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Sewer System Improvements			

Item No.	Estimated Quantity	Description	Total
7.	150 LF	For selling and delivering to the City 3" HDPE pipe and fittings for sewer force main, the price per lineal foot of _____ Dollars and_____Cents	$_____
8.	150 LF	For installing 3" HDPE pipe and fittings for sewer force main along Cairo Lane and across NW 135th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
9.	Lump Sum	For selling and delivering to the City all valves necessary and tapping sleeve for the hot tapping of the existing 16" CIP FM at 135th street, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents	$_____
10.	Lump Sum	For hot tapping the existing 16-inch cast iron force main at: NW 135th Street (STA 43+88±) including installing all valves and tapping sleeve necessary for connection, and, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
11.	670 LF	For selling and delivering to the City 2" HDPE pipe and fittings for sewer force service connections, the price per lineal foot of _____ Dollars and_____Cents	$_____
12.	670 LF	For installing City 2" HDPE pipe and fittings for sewer service connections along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
13.	18 each	For selling and delivering to the City 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____
14.	18 each	For installing 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
15.	18 each	For selling and delivering to the City 2-inch HDPE Plugs for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
16.	18 each	For installing 2-inch HDPE Plugs for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
17.	1 each	For selling and delivering to the City 2-inch ball valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
18.	1 each	For installing 2-inch ball valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
19.	1 each	For selling and delivering to the City 2-inch flushing valve outlets with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
20.	1 each	For installing 2-inch flushing valve outlets with valve boxes for sewer force main along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
21.	1 each	For furnishing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
22.	1 each	For constructing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
23.	1 each	For selling and delivering to the City 2-inch mechanical joint plug valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
24.	1 each	For installing 2-inch mechanical joint plug valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
25.	2 each	For adjusting rim elevation of existing sewer valves to meet proposed grade, and replace cover, along Cairo Lane, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
26.	3 each	For adjusting rim elevation of existing sewer ARV's to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Drainage System Improvements			
27.	1595 LF	For selling and delivering to the City 24" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
28.	1595 LF	For installing City 24" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
29.	395 LF	For selling and delivering to the City 18" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
30.	395 LF	For installing City 18" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
31.	105 LF	For selling and delivering to the City 15" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of _____ Dollars and_____Cents	$_____
32.	105 LF	For installing City 15" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
33.	Lump Sum	For furnishing and installing two (2) StormSafe Vaults model SSV40-2-000 by FABCO for the stormwater treatment system at Cairo Lane, the lump sum price of _____ Dollars and_____Cents	$_____
34.	33 EA	For furnishing and installing StormSack Plus model PSS1626-1E-000 by FABCO for the stormwater treatment system at Cairo Lane, the unit price of _____ Dollars and_____Cents	$_____
35.	Lump Sum	For demolishing and disposing existing NSBB Model #NSBB-8-14 drainage treatment structure, the lump sum price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
36.	12 each	For selling and delivering to the City precast stormwater structures along Cairo Lane and NW 127th Street, including rims and covers, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
37.	12 each	For installing precast stormwater structures, including rims and covers along Cairo Lane and NW 127th Street, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
38.	3 each	For repairing damaged stormwater catch basins structures S-2 and S-3 along Cairo Lane and S-27 along NW 127th Street, the unit price of _____ Dollars and_____Cents	$_____
39.	28 each	For adjusting rim elevation of existing stormwater catch basins to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
40.	6 CY	For furnishing and installing precast reinforced concrete headwalls for stormwater outfall, per FDOT index No. 430-030, as indicated in the Plans, the price per cubic yard of	$_____

Item No.	Estimated Quantity	Description	Total
41.	115 TON	For furnishing and installing Rubble (Broken Stone) at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____
42.	5 CY	For furnishing and installing sand-cement bags at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
43.	1 EA	For furnishing and installing manatee grate for 36" pipe for stormwater outfall, as indicated in the Plans, the unit price of _____ Dollars and_____Cents	$_____
44.	1 EA	For furnishing and installing 36-inch in-line check valves with valve boxes for stormwater outfall, as indicated in Plans, the unit price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
45.	Lump Sum (Dedicated Allowance)	For dewatering, transporting to, and safe disposal of, potentially contaminated groundwater, as required for underground pipe installation, the lump sum price of _____ Dollars and_____Cents	$ 300,000
Roadway Reconstruction			
46.	740 CY	For the excavating of existing backfill material along Cairo Lane and NW 127th Street, for the grading for roadway improvements, the price per cubic yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
47.	765 CY	For furnishing and placing suitable Backfill required for the grading for roadway reconstruction along Cairo Lane, NW 127th Street, the price per cubic yard of _____ Dollars and_____Cents.	$_____
48.	7550 SY	For milling (nominal 2 inch thick), surface course for permanent paving repairs along Cairo Lane, the price per square yard of _____ Dollars and_____Cents.	$_____
49.	1300 SY	For selling and delivering to the City Concrete for the installation of 8-inch thick Concrete Pavement per FDOT index No. 350, the price square yard of _____ Dollars and_____Cents.	$_____
50.	1300 CY	For constructing 8-inch thick Concrete Pavement per FDOT index No. 350, as indicated in the Plans, the price per price square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
51.	12150 SY	For furnishing and constructing asphalt base, B-12.5, min. 3.5-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
52.	12150 SY	For furnishing and constructing superpave asphaltic concrete, SP-12.5, PG-76-22 min. 2-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
53.	12150 SY	For furnishing and constructing friction course, FC-12.5, PG-76-21, min. 1-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
54.	1830 SY	For milling (nominal 1 inch thick), surface course for permanent paving repairs along NW 32nd Ave, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
55.	1830 SY	For constructing for Type "V" permanent paving repairs (minimum 1 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
56.	500 SY	For constructing for Type "V" permanent paving installation (minimum 2 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
57.	600 SY	For milling (nominal 1.5 inch thick), surface course for permanent paving repairs along NW 135th Street, the price per square yard of _____ Dollars and_____Cents.	$_____
58.	600 SY	For constructing for Type "V" permanent paving repairs along NW 135th Street Ave (Min 1.5-inch overlay), as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
59.	740 SF	For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
60.	1635 SF	For furnishing and constructing 6-inch concrete driveway approach to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
61.	360 LF	For furnishing and constructing concrete curb and gutter restoration to match existing along the intersection between NW 127th Street and NW 32nd Avenue, the price per linear foot of _____ Dollars and_____Cents.	$_____
62.	8995 LF	For furnishing and constructing concrete valley gutter along Cairo Lane and NW 127th Street, the price per linear foot of _____ Dollars and_____Cents.	$_____
63.	30 LF	For furnishing and installing general guardrail at the outfall along Cairo Lane, the price per linear foot of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
64.	Lump Sum	For furnishing and installing pavement markings, including signage and raised pavement markers, as indicated in plans, the lump sum price of _____ Dollars and_____Cents.	$_____
65.	Lump Sum	For demolishing and disposing existing median curb at the intersection between NW 127th Street and NW 32nd Ave, as indicated in plans, the price per lump sum of _____ Dollars and_____Cents.	$_____
66.	14 EA	For removing and disposing existing trees located at the median curb at the intersection between NW 127th Street and NW 32nd Ave, the unit price of _____ Dollars and_____Cents.	$_____
67.	Lump Sum	For providing full Traffic Control during construction along Cairo Lane, Alexandria Drive and NW 127th Street Maintenance of Traffic, the lump sum price of _____ Dollars and_____Cents.	$_____
Dedicated Allowances			
68.	7 each (Dedicated Allowance)	For repairing damaged fire hydrants assemblies, per Standard Detail WS 4.50, the price per each of _____ Dollars and_____Cents	$ 24,500

Item No.	Estimated Quantity	Description	Total
69.	7 each (Dedicated Allowance)	For demolishing and replacing damaged fire hydrant assemblies, per Standard Detail WS 4.50, the price per each of $6,750 Dollars and 0 Cents	$ 47,250
70.	7 each (Dedicated Allowance)	For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, the price per each of $1,100 Dollars and 0 Cents	$ 7,700
71.	38 each (Dedicated Allowance)	For repairing damaged water meters, including boxes, along Cairo Lane and NW 127th Street as per Standard Details shown in Plans, the price each of, $1,000 Dollars and 0 Cents	$ 38,000
72.	10 each (Dedicated Allowance)	For repairing damaged stormwater catch basins structures, the unit price of $5,500 Dollars and 0 Cents	$ 55,000
73.	5300 SF (Dedicated Allowance)	For sheeting and shoring ordered left in place by the Engineer for sewer and drainage improvements, the price per square foot of $20 Dollars and 0 Cents.	$ 106,000

Item No.	Estimated Quantity	Description	Total
74.	1500 CY (Dedicated Allowance)	For removal, transport and legal disposal of above-ground debris, including tipping fees, the price per cubic yard of _____$185_____ Dollars and_____0_____Cents.	$_277,500_____
75.	2000 SY (Dedicated Allowance)	For restoring sodded area (harmonization), the price per square yard of _____$19_____ Dollars and_____0_____Cents.	$__38,000_____
76.	**Sub-Total – Bid Items 1 through 75**	**$_____**	
77.	Dedicated Allowance	For providing uniformed, off-duty policemen for the purpose of maintenance of traffic, the aggregate sum of _____ Dollars and_____Cents.	$_____
78.	Dedicated Allowance	For all cost of required permit fees including Soil Management Plan and Health & Safety Plan, impact fees, if required by the Engineer, the sum of 5% of the Subtotal, Item 76 (0.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
79.	Contingency Allowance	For unforeseen conditions, for minor construction changes and for quantity adjustments, if ordered by the Engineer, the sum of 10% of the Subtotal, Item 76 (.10) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
80.	Contingency Allowance	For unforeseen plan revisions due to ongoing permitting efforts if required by permitting approvals, only to be used if required and approved by the City, the sum of 5% of the Subtotal, Item 76 (.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
81.	**TOTAL BID – (Sum of Bid Item Nos. 76, 77, 78, 79, and 80,)**	$_____	

Note: For a detailed description of each Quotation Item, refer to Section 01025 of the Specifications entitled "Measurement and Payment.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

The City of Opa-Locka reserves the right to waive any informality in any bid and to reject any or all bids.

TOTAL BASE BID PRICE FOR PROPOSAL (ITEMS 1 THROUGH 81): $_____
(FIGURES)

_____Dollars and

_____Cents

AMOUNTS SHALL BE SHOWN ON BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BASE BID.

Bidder acknowledges that included in the various items of the bid proposal and in the TOTAL BASE BID PRICE are costs for complying with the Florida Trench Safety Act, F.S. 553.60 et. seq. The Bidder by signing and submitting the Trench Safety Act Compliance Statement is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards.

Contract award shall be based upon the total base bid price, as identified above, by the lowest responsive, responsible bidder.

_____ _____

FIRM NAME (PRINT) BIDDER'S SIGNATURE

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

GENERAL CONDITIONS

1.0 PERFORMANCE OF WORK: The Contractor shall supply all labor, transportation, materials, machinery, tools, apparatus and equipment necessary for the entire proper and substantial completion of his work, and be accountable for the safe, proper and reasonable construction, maintenance and use of the same during construction, and shall remove all construction equipment upon completion, and shall perform all work in the best and most workmanlike manner. Special care shall be taken by the Contractor in placing and removing stock piles of material, and in the work in general to avoid unnecessary injury to either public property or other areas adjacent to the work.

2.0 CONCURRENT WORK: Work may be performed concurrently by the utilities in the City or the City's Contractor in the right-of-way and it shall be the responsibility of the Contractor to coordinate his work with the utility companies, the City and the City's Contractors.

3.0 USE OF PUBLIC STREETS: Construction shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Any other excavated material spilled from trucks shall be removed by the Contractor and the streets shall be cleaned twice daily to the satisfaction of the Public Works Director.

4.0 EXISTING UTILITIES AND STRUCTURES: It will be the Contractor's responsibility to exercise all caution in the vicinity of any utility. The Contractor shall be fully responsible for, and make good all damages to buildings, telephone or other cables, sewers, water pipes, pavement, driveways, walls, sprinkler systems, survey markers, or other structures which may be encountered whether or not shown on the plans. The Contractor shall have a utility check performed prior to any construction.

4.1 The locations of existing utilities have been prepared using the best information available however, the information is not guaranteed. The Contractor shall be responsible for determining the location, character and depth of all utilities. The Contractor shall be responsible for and make good all damages to all pavement structures and utilities which may be encountered whether or not shown on the plans. The cost of restoration shall be included in the unit price stated in the proposal for the related work. No extras for restoration will be allowed.

4.2 The Contractor shall protect from damage all utilities, structures, surface and subsurface structures at or near the site of the work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. If the Contractor fails or refuses to

repair any such damage promptly, the City may have the necessary work performed and charge the cost thereof to The Contractor.

4.3 At points where The Contractor's operations are adjacent to utility facilities, which if damaged, might result in expense, loss, disruption of service or other undue inconvenience to the public or to the Owner, work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the Owner and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay caused by The Contractor's operations.

4.4 The Contractor shall not repair or attempt to repair utility damage but shall immediately contact the utility owner. The Contractor shall obtain the name, address, and telephone number of each utility company to contact. The Contractor shall submit to the Engineer these said names and addresses.

4.5 The Contractor shall comply with the Florida Building Code and City Code regarding precautions to be taken in the protection of existing vegetation, structure, utilities and improvements.

4.6 The Contractor shall maintain access to fire hydrants and alarm boxes throughout the prosecution of the work. Hydrants and fire alarm boxes shall be kept clear and kept visible at all times unless approved otherwise. If visibility cannot be maintained, The Contractor shall provide clearly visible signs showing the location of the fire hydrant and fire alarm boxes.

4.7 The Contractor shall comply with the requirements of the Clean Air Act and the Federal Water Pollution Control Act as well as other requirements specified in those regulations and guidelines listed thereunder.

5.0 **EXISTING LANDSCAPING:** The Contractor shall be fully responsible for maintaining in good condition, existing trees, grass and shrubs situated within the designated right-of-way, project site or on private property adjacent to the work.

6.0 **EXISTING SIGNS AND UTILITY CASTINGS:** All existing signs and utility castings shall be preserved and shall remain the property of the City of Opa-Locka. Those not reused shall be delivered to the Opa Locka Public Works Yard at 12950 NW 42 Ave in Opa Locka, FL 33054.

7.0 **STOCK PILING MATERIALS:** Contractor shall not stockpile materials at the project site unless approved in writing by the Engineer.

8.0 **PERMITS:** The Contractor shall obtain all required occupational licenses and permits, etc., and pay all required fees. Permits issued by the City will be issued without charge to the Contractor

9.0 **EXTRAS:** Bills for extras will be allowed only when work is ordered in writing and approved by the Public Works Director. No money will be allowed for extra work

unless approved in writing, beforehand, by the Public Works Director.

10.0 CLEANING UP: The Contractor will be required to leave the work and adjacent areas free of any accumulated rubbish or surplus materials on a daily basis, unless otherwise directed by the Public Works Director. In the event of failure or undue delay on the part of the Contractor, the City may employ such equipment and laboras may be necessary, and charge such costs against the Contractor and deduct the amount from the monies due the Contractor for work performed.

11.0 RESTORATION: The Contractor shall complete all restoration as the work is completed but in no event later than five (5) working days.

12.0 TESTING: The Engineer or other person designated by the Public Works Director to supervise the work shall have the right at any time to have tests made on any material used on the job. All expenses for tests shall be borne by the City of Opa-Locka, except the cost of re-testing materials which failed to meet the specifications and waiting time due to Contractor failure to be ready for tests when scheduled. The cost and scheduling of such re-testing shall be the responsibility of the Contractor. All re-testing shall be done by the testing laboratory which test the failed samples. The Contractor will inform the City of his source of materials with sufficient time to secure the necessary samples and perform the necessary tests. The Contractor shall request and receive inspections of specific phases of work asrequired elsewhere in these specifications. The Contractor shall provide current modified proctor test results for all fill material used on the job.

13.0 PAYMENT: Payment will be made in full compensation for all work performed, materials, labor, tools and equipment furnished, and incidental expenses necessary to complete the work. Payment shall be made on 90% of the monthly estimate and upon the presentation of partial releases of lien. Final payment shall be made upon presentation of a completion statement, receipt of the final releases of lien, receipt of as-built drawings and after final acceptance by the City.

14.0 ACCEPTANCE: Acceptance by the City shall not relieve the Contractor of the responsibility of correcting any defective part of the work resulting from either workmanship or materials or replacing or repairing damaged property resulting from any phase of the Contractor's work.

15.0 GUARANTEE: The Contractor shall guarantee all materials and workmanship for a period of one year from the date of **acceptance** by the City.

16.0 LINE AND GRADE: Where required as determined by the Engineer, the City will establish a base line and reference elevations. All additional lines and grades required for completion of the work shall be furnished at the Contractor's expense.

17.0 TRAFFIC MAINTENANCE: The Contractor shall provide all temporary signing, striping, detouring, barricading, signals, competent flagmen, etc. required in accordance with the minimum requirements of the latest Manual of Uniform Traffic

Control Devices, whenever and wherever needed for pursuance of the project, and/or as directed by the Engineer. The Contractor shall also coordinate these operations with the City of Opa-Locka Public Works Department. The Contractor shall supply the Engineer with a traffic maintenance plan.

18.0 PROTECTION OF WORK: It shall be the Contractors' responsibility to protect the public and workmen from ongoing construction hazards.

19.0 UNIFORMED POLICE: The Contractor shall be responsible for obtaining the services of the uniformed police officers as needed or as directed by the Engineer. The Contractor shall be reimbursed for the direct, actual expenses for such uniformed police officers.

20.0 INSPECTION: Inspection will be required during all phases of construction, and it shall be the Contractor's responsibility to contact the Engineer or its representative when any work is being performed. The Contractor shall also be responsible for coordinating all inspections of work performed by Subcontractors. Failure to contact the Engineer/Architect or its representatives to obtain the required inspections shall be sufficient cause for rejection.

21.0 LICENSES: The Contractor and all Subcontractors shall submit at the time of bidding, copies of all licenses held by the Company that pertain to the type of work to be performed under this contract. Failure to submit copies of licenses is grounds for rejection of the bid.

22.0 CONTACT PERSON: The Contractor shall provide the Engineer with a local (Miami Dade County) telephone number where the Contractor can be contacted 24 hours a day for the duration of the project.

23.0 UTILITY COORDINATION: The City will not be liable for any delay or added expense the Contractor experiences due to the actions of others, nor shall the City be held responsible for any damages which may be incurred, due to the actions of the Contractor or representative.

24.0 EXAMINATION OF PREMISES: Before submitting proposals for his work, each bidder will be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obligated to work, including all conditions which will in any way affect the work under this contract.

25.0 NON-EXCLUSIVE CONTRACT: Nothing in this contract shall prevent the City from employing other contractors to perform the same or similar work. This can include other contractors working concurrently on the same location.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

SPECIAL CONDITIONS

1.0 SCOPE OF WORK:

1.1 CAIRO LANE AND NW 127TH STREET IMPROVEMENTS: The work generally consists of but is not necessarily limited to the following: the selling, delivering and installing of Contractor furnished materials and equipment necessary for the complete replacement of a section of 3-inch force main, a section of solid drainage trunk line ranging in size from 18-inch to 36-inc including manholes and treatment structure, and the installation of water service connections within Cairo Lane, NW 127th Street and Alexandria Drive. Replacement including cleaning and testing as required, maintenance of water and sewer service; together with all appurtenant for miscellaneous items and work for a completed project.

2.0 COMPLETE PROJECT REQUIRED: The specifications describe the various items or classes of work required enumerating or defining the extent of same where necessary to clarify the drawings, but failure to list any items shall not relieve the Contractor from furnishing, installing and performing such work where shown on the drawings, required by any part of the specifications or necessary for the satisfactory completion of the project.

3.0 WORK SCHEDULE: The Contractor shall submit schedules which show the order in which the Contractor proposes to carry out the work with dates for starting various parts of the work and estimated completion dates. The progress schedules shall be furnished to the Engineer prior to the pre-construction meeting date which will be established by the City.

4.0 PRE-CONSTRUCTION MEETING: After the contract has been awarded and signed, but prior to commencement of work, a pre-construction meeting shall be held. The meeting shall be attended by authorized representatives of the City and Contractor. The purpose of this meeting will be to review the Contractor's submitted progress schedule, clarify jurisdiction and to acquaint all parties presentwith the authorized representative to be notified. The Contractor will be notified inwriting as to the date and place of the meeting.

5.0 AS-BUILT INFORMATION: As work progresses, the Contractor must record all information pertaining to changes and deviations from the contract drawings with special attention to all underground installations. At completion of the job, the Contractor shall submit a complete set of reproducible as-built drawings to the City.

Additionally, the Contractor shall maintain a field book with all deviations recorded. The completed as-built sketches and field books shall become the property of the City. As-built information must be supplied with each pay request. Failure to provide as-built information is cause to reject pay request.

6.0 **LIQUIDATED DAMAGES:** Should the Contractor, or in the case of default, the surety, fail to fully complete the work within the time stipulated in the proposal, the minimum sum of five hundred dollars ($500.00) per day shall be deducted from any money due the Contractor not as a penalty but as liquidated damages.

7.0 **APPROVAL OF MATERIALS:**

7.1 Whenever in these plans and/or specifications a certain brand of materials is specified, it is done for establishing the level of quality, capacity and the characteristics desired. Materials or products specified by the name of manufacturer or the brand or trade name or catalog reference shall be the basis ofthe bid.

7.2 The Contractor shall make written request for the use of alternate materials within ten (10) days after the Contract is signed, and before ordering any materials requiring approval. If the Contractor makes no request for approval of alternate materials within ten (10) days of the signing of the Contract, it shall be assumed that he intends to furnish the items specified.

7.3 The use of materials other than that specified without the written approval of the Engineer shall be sufficient reason for rejection of the work.

8.0 **USE OF PUBLIC STREETS:** Construction in the right-of-way or streets shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Access to all residents' homes shall be maintained at all times. A minimum of one traffic lane shall be open at all times.

9.0 **STRIPING**:

9.1 Temporary striping shall be placed within 48-hours of completion of each course of asphalt unless another course is placed within 48-hours. The cost of temporary striping shall be included in the unit cost of permanent thermoplastic striping.

9.2 Permanent thermoplastic striping shall be placed within 30 days of completing final paving unless otherwise approved by the Engineer.

10.0 **RESTORATION OF SURVEY MARKERS:** When existing survey markers are removed or destroyed as a result of the construction, it shall be the responsibility ofthe contractor to replace them using a registered licensed surveyor.

11.0 **PROJECT LAYOUT:** The Contractor shall layout the proposed work and contact all utilities to verify utility locations. If changes are required, due to conflict or design,the

Engineer will make the final determination.

12.0 WORKING HOURS: The normal City working hours are Monday through Friday 8:00 a.m. until 5:00 p.m.

13.0 FINANCIAL STATEMENT: As part of the Contractor's submittal, he/she shall include a certified financial statement detailing the company's financial status over the previous two years.

14.0 NOTICE TO PROCEED: A single notice to proceed will be issued for this project. Upon receipt of the notice to proceed, the contractor shall commence work upon the site(s) within 10 working days and continue such work in an expeditious manner to a conclusion acceptable to the Engineer. No more than 7 consecutive days without construction activity will be allowed unless approved by the Engineer.

15.0 ENVIRONMENTAL PROTECTION:

General Requirements – The Contractor shall provide and maintain environmental protection during the life of the Contract. Environmental protection shall be provided to correct conditions that develop during the conductance of the work, or that are required to control pollution that develops during the development of project. The Contractor's operations shall comply with all Federal, State and local regulations pertaining to water, air, solid waste, and noise pollution.

Protection of Natural Resources – It is intended that the natural resources within the site and outside the limits of permanent work performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine his work activities to areas defined by the Contract Documents. All work under this contract shall be performed in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the City. At alltimes special measures shall be taken to prevent oily or hazardous substances from entering the ground, drainage areas, or local bodies of water.

Control and Disposal of Wastes – The Contractor shall transport and dispose of allwaste in a manner that complies with Federal, State, and local requirements. The Contractor shall provide the Engineer with a copy of any state and/or local permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses and the location of the disposal area shall beprovided prior to transporting any waste material. Fueling and lubricating of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil shall be disposed of in accordance with approved procedures meeting Federal, State and local regulations.

Preservation of Water Courses – The Contractor shall maintain the working area free of excess debris and litter. Furthermore, the Contractor shall take all necessary precautions to protect the Canal waterway in a manner that complies

with Federal, State, and local requirements.

The maximum use of low-noise emission products as certified by the Environmental Protection Agency shall be made when available.

16.0 **SAFETY**: The Contractor shall be responsible for the safety of the Contractor's employees. The Contractor shall abide by all Federal, State, County, and City safety requirements and regulations. The Contractor is responsible to furnish the Contractor's employees with all required safety equipment. The Contractor is required to comply with all applicable OSHA regulations including, Right to Know, Confined Space Entry, Airborne Blood Pathogens.

The Contractor is fully responsible to furnish safety equipment to all of the Contractor's employees on the Owner's job site, including but not limited to safety glasses, gloves, vests, hard hats, braces or any other required safety item. The Contractor is required to make certain that each employee is wearing the proper safety clothing including shoes.

17.0 **CONFINED SPACE ENTRY PERMIT:** The Contractor must comply with all the provisions contained in OSHA 1910.146 and shall show proof of compliance with the first project invoice. No payment shallbe made until such proof is presented and approved by the City

.

18.0 **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY.** THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THESE CHANGES SHALL BE REFLECTED IN ITEM NO. 80 OF THE BID ITEM LIST.

TECHNICAL SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

01010 SUMMARY OF WORK

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. This section describes the project in general and provides an overview of the extent of the work to be performed under this Contract. Detailed requirements and extent of work is stated in the applicable Specification sections and shown on the Contract Drawings. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the work under this Contract.

1.0.2 DEFINED TERMS

A. As-Built Drawings: As-built drawings reflect field changes and construction modifications to the conformed Bid Documents.

B. Contract Documents: Shall mean all those documents named in the contract.

C. Contractor: Contractor shall mean any person engaged to supply labor, materials por equipment for use in the fulfillment of the project.

D. Construction Drawings: Shall mean the drawings, plans, or reproduction thereof which show scope, character, location, dimensions, and other details of the work to be performed under the Contract Documents.

E. Engineer: Shall mean the City Engineer of the City of Opa-Locka, Public Works Department, or City's designee.

F. Project: Shall mean and include all construction, for which the Contractor is responsible under the contract documents

G. Regulations: Shall mean laws, ordinances, statutes, and lawful order issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the work.

H. The City: Shall mean the City of Opa-Locka, Florida.

I. Work: Shall mean all labor, permits, bonds, equipment, materials and incidentals required.

1.0.3 SPECIFICATIONS

A. The specifications included in these Contract Documents establish the minimum performance and quality requirements for materials and equipment together with the minimum standards for quality of workmanship and appearance. Generally, there has been no attempt to separate the Specification sections into groups for the work of separate Subcontractors, or for work to be performed by the various trades. Should there be any question as to the interpretation of any Specification section or part of Specification section, such question should be directed to the Engineer prior to the submittal of a proposal for the work under this Contract.

B. The Cairo Lane, NW 127th Street improvements work shown on the drawings is intended to be comprehensive and descriptive, not an exact and complete representation of the actual finished work. Pipeline replacement shall include all accessories and components required to provide a complete and satisfactory system as specified, even though some items may not be specifically shown on the drawings.

C. It is the intent of the City to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

D. The Contractor shall also supply all sheeting, shoring, bracing and all other labor, material or equipment required to preclude damage to, or loss of functionality of, any existing facility or system.

1.0.4 REASONABLY IMPLIED PARTS OF THE WORK

A. Any part of the work which is not mentioned in the specifications but is shown on the drawings, or any part not shown on the drawings but described in the specifications, or any part not shown on the drawings nor described in the specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work, without extra cost to the City, as if fully described in the specifications and shown on the drawings, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the Work.

1.0.5 DESCRIPTION OF WORK

A. The project is located along Cairo Lane between NW 127th Street and NW 135th Street; NW 127th Street between Cairo Lane and NW 32nd Ave.

B. The project proposes the installation of an HDPE corrugated pipe ranging in size between 15-inch to 24-inch, the installation of ten (10) stormwater catch basin

structures, repairing of damaged existing catch basin structures and installation of cartridge-based stormwater treatment structure. The project would involve installation of rip-rap at stormwater outfall embankment, installation for new pipeline including excavation and backfill, pavement restoration and pavement markings.

C. Additionally, the project proposes the installation of approximately 145 LF of 3-inch HDPE force main pipe, the installation sanitary service connections, and a connection to an existing 16-inch DIP force main. The project would involve installation of adjusting rim elevation of existing valves to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

D. The project also proposes the installation of two (2) fire hydrant assemblies for the water system, repairing or replacing any damaged existing fire hydrants, and repairing or replacing any damaged existing water meters. The project would involve installation of adjusting rim elevation of existing valves and water meter boxes to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

E. It is the intent of the City to obtain a complete and working installation under this Project and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.6 PROJECT BACKGROUND

On May 2015, a Design-Build project was awarded by the City to Intercounty Engineering Inc. where the original design included improvements to the water, wastewater, stormwater systems and roadway reconstruction at Cairo Lane, NW 127th Street and sections of Alexandria Drive. The construction began in February 2016 but was stopped in July 2019.

During this period, fir the stormwater system the contractor achieved the installation of 85% of the planned infrastructure, consisting of eighteen (18) catch basins and 1,226 LF of trunk drainage pipping along Cairo Lane, as well as thirteen (13) catch basins and 1,987 LF of trunk drainage pipping along NW 127th Street. The remaining 15% of the planned improvements are pending primarily in Cairo Lane, where two (2) catch basins and 1,546 LF of drainage pipelines from the original design await installation.

Additionally, for the wastewater improvements the contractor achieved only 65% of the planned infrastructure leaving 35% of the proposed improvements pending. Approximately 967 LF of 3-inch HDPE force main was installed along Alexandria Drive with only the service connections pending and approximately 2,449 LF of 3-inch HDPE force main was installed along Cairo Lane, leaving the interconnection to the 16-inch CIP force main pending as well as the installation of the service lines.

For the water system improvements, the contractor achieved the installation of 100% of the water distribution pipelines and seven (7) fire hydrants, which represents almost the

entirety of the proposed system. The remaining improvements are pending primarily on NW 127th Street, where to (2) fire hydrant await installation.

The roadway reconstruction pertained to the last stage of the project, the entirety of these improvements is still pending.

1.0.7 WORK COVERED BY CONTRACT DOCUMENTS

A. Following receipt of Notice to Proceed with the work, the Contractor shall notify the Engineer at least ten (10) days before he/she is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing facilities. Any control modifications to the existing facilities shall not be made without first obtaining written permission form the Engineer and the City.

C. Critical events in the sequence of construction are specified herein. The outline sequence of construction does not include all items necessary to complete the work but is intended to identify the sequence of critical events necessary to minimize disruption to the ongoing operation. The sequence of construction is a precedence requirement and does not attempt to schedule the Contractor's work. It is intended only to indicate which activities must precede other activities in order to minimize interference and disruptions.

D. The existing facilities shall be maintained in an operable condition by the Contractor during construction, as indicated in the sequence of construction. All work by the Contractor that disrupts the normal operations shall be shown on the Construction Schedule and specifically scheduled with the City's staff. The schedule notification shall consist of a written notice defining the work to be accomplished, the function that will be interrupted, the duration of the interruption, and the mitigation effort to be performed by the Contractor to maintain systems capacity continuously. The written notice shall be submitted to the City fourteen (14) days in advance of the proposed work and the City will respond to the Contractor in writing within seven (7) days of receipt of the notice regarding the acceptability of the proposed plan.

1.0.8 SEQUENCE OF CONSTRUCTION

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned

specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

   a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

   b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to any excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.**

11. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

12. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

13. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

14. The general sequence of work shall be as follows:

1) Phase I – Mobilization

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:
Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 5 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 6 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 7 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 8 At Cairo Lane

At STA. 12+85.40±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 9 At Cairo Lane

At STA. 14+09.55±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 10 At Cairo Lane

At STA. 16+29.36±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 11 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 12 At Cairo Lane

At STA. 17+17.51±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 13 At Cairo Lane

At STA. 17+37.10±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

At STA. 18+16.42±:

Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 15 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 16 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 17 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 23 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 24 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 25 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 26 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 27 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 28 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 29 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 30 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 31 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 32 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 34 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 35 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 36 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 37 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 38 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 39 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 40 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

C. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01011 SITE CONDITIONS

PART 1 – GENERAL

1.0.1. SITE INVESTIGATION

A. The Contractor acknowledges that he has satisfied them as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation: disposal, handling and storage of materials; availability of labor, water, electric power, roads; disposal of water from construction; uncertainties of weather; the conformation and conditions of the ground; the type of equipment and facilities needed preliminary to and during the prosecution of work and all other matters which can in any way affect the work or the cost thereof under this contract.

B. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City included with these contract documents. Any failure by the Contractor to acquaint the City or them with all the available information will not relieve them from the responsibility for properly estimating the difficult or cost thereof under this Contract.

C. The Contractor acknowledges that by personal field observation or other means satisfactory to himself, performed prior to the bid, he has included in the prices bid all costs for dealing with all construction problems create by observable above or on grade features on or adjacent to the site of the site of the work whether or not these features are shown on the plans or described in the specifications. In instances where the observable features indicate subsurface conditions which may affect the project work, as for example, a pavement patch or catch basin gratings indicating respectively a utility or storm sewer not shown on the plans, the Contractor acknowledges that he has made timely, diligent, inquiry of the Engineer or by other means fully satisfied themselves prior to the bid as to the nature of, and costs created by, the subsurface condition and included all costs therefore in the prices bid.

1.0.2. SITE CONDITIONS

A. All information obtained by the City regarding the site conditions, topography, subsurface information, groundwater contamination, groundwater elevations, existing construction of site facilities as applicate, and similar data will be made available for inspection at the office of the Engineer upon request. Such information is offered as advisory information only. Neither the Engineer nor the City assumes any responsibility for the completeness of, or for the Contractor's interpretation of, such advisory information. Prior to bidding and after written approval from the City, bidder shall make his own investigations to satisfy themselves with site conditions at their own cost.

B. Surface investigations, including test borings, have been made to indicate subsurface conditions at locations in the project.

C. Prospective bidders are advised, at their own expense, to make such subsurface investigation, by boring or test hole excavation, as may be desirable. However, such work shall be scheduled by appointment with the Engineer if for a City site or by notification to the City and property permitted if in the public right of way.

1.0.3. DIFFERING SUBSURFACE CONDITIONS

A. In the event Subsurface or latent physical conditions are found materially different from those indicated in these documents and differing materially from those ordinarily encountered and generally recognized as inherent in the character of work covered in these project documents, promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

B. The Engineer will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer finds that such conditions do so materially differ as to cause an increase or decrease in cost and time considered reasonable by the Engineer, the City will make the final decision regarding any adjustment in cost or time for completion.

C. In the event that site conditions differ from those expected by the Contractor, the Contractor shall proceed to complete the work as contemplated by the plan and specifications on his own cost and expense. If in the discretion of the Engineer, the difference in site conditions renders completion of the work as described by the plans and specifications impossible, the Engineer may alter the work, whereupon the Contractor shall be compensated for any extra work pursuant to “Extra Work and Payment therefore” of the special conditions; the Engineer shall no alter the work where the site conditions render the work more difficult or costly to perform, if such work is otherwise still possible as described in the contract documents.

1.0.4. EXISTING UTILITIES AND LOCATION SERVICES

A. Known utilities and structures adjacent to or encountered in the work are shown on the drawings. The locations shown are taken from existing records and the best information available from the existing plans; However, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Engineer or the City for their accuracy or completeness.

B. **No request for additional compensation or Contract time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the work shall rest solely with the Contractor.**

C. Prior to proceeding with excavation, the Contractor shall contact all utility companies and all other users of the right of way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three (3) normal working days before starting construction. The Contractor shall proceed with caution in the excavation and preparation so that the exact location of underground utilities may be determined.

D. It is the responsibility of the Contractor to ensure that all utility or other existing facilities, the stability of which may be endangered by the close proximity of excavation, are temporarily held in position while work proceeds in the vicinity of the facilities and that the utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

E. The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, the Contractor shall immediately notify the responsible official of the organization operating the interrupted utility. The Contractor shall lend all possible assistance in restoring services and shall assume all cost, charges, or claims connected with the interruption and repair of such services, as determined by the City.

1.0.5. CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

A. Where the Contractor's operation could cause damage or inconvenience to railway, telephone, fiber optic, television, electrical power, oil, gas, water, sewer, irrigation system, or any other utility, public or private, the Contractor shall make all arrangements necessary for the protection of these utilities and services.

B. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities and utility poles where necessary. **Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines whether shown on the plans or not.**

The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

C. The Contractor and his Subcontractor shall be solely and directly responsible to the Owners and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this contract.

D. Neither the City nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractors failure to protect utilities encountered in the work.

E. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any utility service be allowed unless granted by the Owner of the utility.

F. In the event water service lines that interfere with construction are encountered, the Contractor may, by obtaining prior approval of the water utility, cut the service, dig through, and restore the service with similar and equal materials at the Contractor's expense and as approved by the Engineer.

G. Replace, with material approved by the Engineer, at Contractor's expense, any and all other laterals, existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents and as approved by the Engineer.

1.0.6. INTERFERING STRUCTURES

A. Take necessary precautions to prevent damage to existing structures whether on the surface, above ground, or underground. An attempt has been made to show major structures on the plans. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and is presented as a guide. The Contractor is solely responsible for field verification of all information provided and to determine the type, location, elevation and extent of any utilities which may not have been shown on the plans.

1.0.7. FIELD RELOCATION

A. During the process of construction, it is expected that minor relocations of the work may be necessary. Such relocations shall be made only by the direction of the Engineer at the Contractor’s expense. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in

order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor fails to notify the Engineer when an existing structure is encountered, and proceeds with the work despite this interference the Contractor does so at his own risk.

B. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the specifications and the permitting documents.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01015 INDEX OF DRAWINGS

PART 1 – GENERAL

1.0.1. PLANS BY THE CITY

A. Plans dated December 2022 and any subsequent revision, thereto, introduced by Addenda prior to bid, showing this work, are hereby made a part of the Contract Documents, and are **listed** as follows:

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		TITLE SHEET,
G-02		GENERAL NOTES
G-03		NOTES AND LEGENDS,
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-02		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-03		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-04		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-05		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-06		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-07		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

C-08	PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-09	STANDARD DETAILS (WATER SYSTEM)
C-10	STANDARD DETAILS (WATER SYSTEM)
C-11	STANDARD DETAILS (WATER SYSTEM)

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		GENERAL PLAN & NOTES
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE CAIRO LANE
C-02		PLAN AND PROFILE CAIRO LANE
C-03		PLAN AND PROFILE CAIRO LANE
C-04		PLAN AND PROFILE CAIRO LANE
C-05		PLAN AND PROFILE CAIRO LANE
C-06		STANDARD DETAILS
C-07		STANDARD DETAILS

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		KEY SHEET
G-04		POLLUTION PLAN CAIRO LANE
G-05		POLLUTION PLAN NW 127TH ST
CIVIL		
C-01		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-02		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-03		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-04		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-05		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-06		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-07		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-08		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-09		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-10		ROADWAY PLAN NW 32ND AVE
C-11		CROSS SECTIONS - CAIRO LN
C-12		CROSS SECTIONS - CAIRO LN

C-13	CROSS SECTIONS - CAIRO LN
C-14	CROSS SECTIONS - CAIRO LN
C-15	CROSS SECTIONS - CAIRO LN
C-16	CROSS SECTIONS - NW 127TH STREET
C-17	CROSS SECTIONS - NW 127TH STREET
C-18	CROSS SECTIONS - NW 127TH STREET
C-19	CROSS SECTIONS - NW 127TH STREET
C-20	TYPICAL CROSS SECTIONS
C-21	TYPICAL CROSS SECTIONS
C-22	STANDARD DETAILS
C-23	STANDARD DETAILS
C-24	STANDARD DETAILS
C-25	STANDARD DETAILS
C-26	EROSION CONTROL NOTES & DETAILS
C-27	STORMWATER POLLUTION PREVENTION PLAN
C-28	STORMWATER POLLUTION PREVENTION PLAN
C-29	STORMWATER POLLUTION PREVENTION PLAN
C-30	STORMWATER POLLUTION PREVENTION PLAN
C-31	STORMWATER POLLUTION PREVENTION PLAN
C-32	SIGNING AND PAVEMENT MARKINGS
C-33	SIGNING AND PAVEMENT MARKINGS
C-34	SIGNING AND PAVEMENT MARKINGS
C-35	SIGNING AND PAVEMENT MARKINGS
C-36	SIGNING AND PAVEMENT MARKINGS
C-37	MAINTENANCE OF TRAFFIC PLANS NOTES AND DETAILS

B. **Due to the possibility of typing errors or omissions, the above list shall not be considered as necessarily complete, nor shall the City Standard Details which may be included elsewhere herein be considered as forming a complete listing of all City Standard Details which may apply to this Project. Perform all work shown on all sheets of the Plans, as specified herein or necessary for a complete functional installation and no extra compensation will be made due to the omission or incorrect listing of a Drawing in this Section. All City Standard Details are incorporated in these Contract Documents by reference and all work shall be performed in accordance with all applicable City Standard Details.**

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01016 SAFETY REQUIREMENTS, HURRICANES PREPAREDNESS AND PROTECTION OF PROPERTY

PART 1 – GENERAL

1.0.1. CONTRACTOR'S RESPONSIBILTY FOR SAFETY

A. Conduct whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the contract period. This requirement shall apply continuously and not be limited to normal working hours.

B. The Contractor shall be in compliance with all applicable provisions of the Occupational Safety and health Act of 1970. The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for his review before "Notice to proceeded" will be issued.

C. Neither the professional activities of the design professional, nor the presence of the design Professional nor his or her employees and subconsultants at a construction site, shall relieve the Contractor and any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequence techniques or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the project documents and any health and safety precautions required by any regulatory agencies.

1.0.2. FEDERAL STATE AND LOCAL SAFETY REQUIEREMENTS

A. Safety provisions shall conform to the federal and state Departments of labor Occupational Safety and Health Act (OSHA), and all other applicable federal, State, County, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these project Documents. Where any of these are in conflict, the more stringent requirements shall be followed. Contractor's failure to thoroughly familiarize with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

B. All excavations made in the earth shall be performed in compliance with the State of Florida Trench Safety Act, OSHA 29 CFR 1926 Subpart P (Chapter 90-96, Laws of Florida). The Contractor shall appoint a *competent person*, in accordance with subpart P, who shall be present at the jobsite. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

C. The Contractor shall be familiar with the “Underground facility Damage” Prevention and safety Act” Florida Statute 556. The Contractor shall contact the Sunshine State One Call of Florida, at 01-800-432-4770 or by submitting an internet ticket entry via www.sunshine811.com) at least 48 hours prior the excavation. Failure to familiarize himself with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

D. Conduct operations in such a manner utilizing warning devices, such as traffic cones, barricades and warning lights that traffic, pedestrian and City personnel are given adequate warning of hazards of the worksite as may be deemed necessary by the City, Engineer of Record, and governing agency having jurisdiction over the work or political subdivision.

E. The Contractor shall be in compliance with all applicable provisions of the OSHA Code of Federal Regulations (CFR), including, but not limited to, the following:

1. 29 CFR Part 1910 Subpart D - Walking-Working Surfaces
2. 29 CFR Part 1910 Subpart G - Occupational Health and Environmental Control
3. 29 CFR Part 1910 Subpart H - Hazardous Materials
4. 29 CFR Part 1910 Subpart I - Personal Protective Equipment
5. 29 CFR Part 1910 Subpart J - General Environmental Controls
6. 29 CFR Part 1910 Subpart N - Materials Handling and Storage
7. 29 CFR Part 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment
8. 29 CFR Part 1910 Subpart Q - Welding, Cutting and Brazing
9. 29 CFR Part 1910 Subpart S – Electrical
10. 29 CFR Part 1910 Subpart T - Commercial Diving Operations
11. 29 CFR Part 1910 Subpart Z - Toxic and Hazardous Substances
12. 29 CFR Part 1926 Subpart E - Personal Protective and Life Saving Equipment
13. 29 CFR Part 1926 Subpart H - Materials Handling, Storage, Use, and Disposal
14. 29 CFR Part 1926 Subpart I - Tools - Hand and Power
15. 29 CFR Part 1926 Subpart J - Welding and Cutting

16. 29 CFR Part 1926 Subpart K – Electrical

17. 29 CFR Part 1926 Subpart L – Scaffolds

18. 29 CFR Part 1926 Subpart M - Fall Protection

19. 29 CFR Part 1926 Subpart P – Excavations

20. 29 CFR Part 1926 Subpart Q - Concrete and Masonry Construction

21. 29 CFR Part 1926 Subpart S - Underground Construction, Caissons, Cofferdams, and Compressed Air

22. 29 CFR Part 1926 Subpart Z - Toxic and Hazardous Substances

23. 29 CFR Part 1926 Subpart AA - Confined Spaces in Construction

24. 29 CFR Part 1926 Subpart CC - Cranes and Derricks in Construction

F. In addition, the Contractor shall adhere to any other applicable Federal, State and Local Safety and Health Regulations involving General industry and/or Construction Standards not mentioned in the Specifications.

G. For trench excavations in excess of five (5) feet in depth, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," the "Trench Safety Act" section of the Quotation, and Section 6.01 "Excavation."

H. The Contractor shall comply with the provisions of Florida Statutes Chapter 556, "Underground Facility Damage Prevention and Safety Act." The Contractor shall contact Sunshine 811 by calling 811 or 1-800-432-4770, or by submitting an internet ticket entry via www.sunshine811.com, at least forty-eight (48) hours prior to any excavation. Failure to familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and the penalties set forth herein.

I. All open excavations made in the earth shall be performed in compliance with OSHA 29 CFR Part 1926 Subpart P - Excavations, and Florida Statutes Chapter 553, Part III, "Trench Safety Act." The Contractor shall appoint a "competent person," in accordance with Subpart P, who shall be present at the job site. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

1.0.3. SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

A. The Contractor shall at all time provide proper facilities for safe access to the work by authorized government officials.

1.0.4. CONSTRUCTION SAFETY PROGRAM

A. Develop and maintain for the duration of the project, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor's Manual of Safety practices outlining the firms policies on field safety procedures for employees shall be submitted to the Engineer for review before "Notice to Proceeded" will be issued. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

B. Certain products specified in these specifications contain warnings by the manufacturers that under certain conditions, if instructions for use are not followed, a hazardous condition may exist. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.

C. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's Safety Supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

1.0.5. SAFETY EQUIPMENT

A. As part of the safety program, maintain at an office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and stablish the procedure for the immediate relocation to a hospital or a doctor's care of any person who may be injured on the jobsite.

B. Perform all necessary work to protect all personnel and the general public from hazard, including, but not limited to, surface irregularities or unramped grade changes, and trenches or excavations. Furnish barricades, lanterns, and proper signs to safeguard all persons and work.

C. There shall be no oil dripping from equipment or oil spills.

D. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags, and remnants of the material in a manner approved by the City of Environmental Resources Management at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM, and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

E. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, logging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.

F. During construction, construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railings, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards. All such barriers shall have adequate warning lights as necessary, or required, for safety.

1.0.6. STORAGE OF HAZARDOUS MATERIALS

A. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags and remnants of the material in a manner approved by the Department of Environmental Resources Management (DERM) at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

B. The Contractor is hereby cautioned that he cannot store any environmentally hazardous materials such as solvents, greases, lubricants or any other type of chemical substances at the Pump Station site. The Contractor shall be allowed to keep only such materials at the site for immediate use.

1.0.7. ACCIDENT REPORTS

A. If death, serious injuries, or series damage are caused, report the accident immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer and the City all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

B. If a claim is made by anyone against the Contractor or any Subcontractor on account of any accident, promptly report the facts in writing to the Engineer and the City, giving full details of the claim.

1.0.8. FIRE PREVENTION AND PROTECTION

A. Perform all work in fire-safe manner. Furnish and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.0.9. HURRICANE PREPAREDNESS

A. During such periods of time as are designated by the United States Weather Bureau as being a hurricane alert, the Contractor shall perform all precautions as necessary to safeguard the work and property, including the removal of all small equipment and materials from the site, lashing all other equipment and materials to each other and to rigid construction, and any other safety measures as may be directed by the Engineer.

B. During the hurricane season, which runs from June 1st to November 30th, it may become necessary to suspend work due to an impending storm until the proper working conditions prevail. In the event of a tropical storm or hurricane, it is the Contractor's responsibility to secure the jobsite in anticipation of the storm.

C. Fifteen (15) days prior to beginning of construction, the Contractor shall submit to the City or designee a Hurricane Preparedness Plan. The plan shall outline the necessary measures that the Contractor proposes to perform in the event of a tropical storm or hurricane in order to protect all work, materials, and equipment from exposure and properly safeguard all components of the project.

D. Prior to the Start of Work: The Contractor shall submit for approval, a plan of action for the specific actions to be taken on this specific project during a hurricane warning. The Contractor shall ensure operation of the by-pass system, if applicable, during the storm event. Backup power shall be included in case of power failure from FPL, as needed.

E. Upon notification of Hurricane Watch:

1. Formal notification to all Contractors to prepare and submit for approval a Plan of Action for the specific actions to be taken on their particular projects.

F. Upon notification of a Hurricane Warning:

1. Formal notification to the Contractors to implement their approved plan of action to protect the project and the public.

2. For pipeline construction projects within the public right-of-ways, the Contractor will be notified by the Construction Manager Office to suspend his construction operations. The Contractor will backfill all open trenches, remove all construction equipment and materials from the right-of-way, remove unnecessary traffic barricades and signs, secure remaining barricades by "half burial" or "double sandbags".

G. Post Disaster Work: In the event of a disaster declaration by the local or state governing authorities, the City may choose to obtain the services of the Contractor to perform work made an imminent priority for the disaster event. The compensation for the additional work caused by the disaster shall be negotiated between the Engineer

and the Contractor with written approval provided by both parties prior to mobilization at the designed location or locations. The value of the work performed shall be up to the original contract with contingencies and dedicated allowances.

1.0.10. JOINT SURVEY TO ESTABLISH AUTHENCITY OF POSSIBLE DAMAGE CLAIMS

A. The Contractor shall maintain vertical and horizontal survey control points on all structures and improvements, located in the vicinity of the work prior to beginning work, and shall periodically check the points for movements with copies provided to the Engineer, of the survey notes for each survey and a copy of the layout of the survey control points.

B. After the contract is awarded and before commencement of work, the Contractor shall perform a thorough examination of existing buildings, structures and other improvements in the vicinity of the work, as applicable, which might be damaged by his operations.

1. Examinations of existing structures, buildings, and other improvements in the vicinity of the work shall be done by the Contractor. The scope of the examination shall include cracks in the structures, settlement, leakage, and similar conditions. The City assumes no responsibility for pre-existing conditions of the structure.

2. Records in triplicate of all observations shall be prepared by the Contractor, photographs shall be taken by the Contractor signed and dated, with descriptive information and in the manner specified above. One signed copy of every document and photograph will kept on file in the office of the Engineer. Video recording also required.

3. The above records are intended to be used as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and are for the protection of the Contractor and the City, and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work.

C. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such detective pavement exist prior to proceeding with any work in the vicinity. Preconstruction videos and digital pictures shall be taken with date stamps of the entire area of work. A copy of all such notices shall be forwarded to the City.

1.0.11. TRAFFIC – GENERAL

A. Traffic safety and traffic control devices shall eb employed on all private and public construction work withing the public right-of-way. Such measures shall be established

and provided in conformance with the following regulations and in conformance with the Miami-Dade County Public Works Manual.

B. For construction within the City's public right-of-way, the Contractor shall submit two sets of construction plans for review to the City of Opa-Locka Public Works Department.

C. All traffic control and warning devices so specified shall, unless otherwise specified by the City be furnished, installed according to the Miami-Dade County Public Works Manual, Part I, Standard Details traffic control and safety by an Uniformed Police Officer, when specified, shall by furnished by the Contractor.

D. The Contractor shall take necessary precautions to ensure complete protection to public health, welfare, and safety. Adequate protection and warning devices shall be placed at locations surrounding work areas to prevent injuries to public properties. Particular emphasis must be placed on safety devices for vehicular traffic. Any work areas that may create a hazard at night shall be well lighted form sunset to sunrise with lamps or lanterns visible from all approaches. All maintenance of traffic signals must be approved by the City.

1.0.12. TRAFFIC SAFETY AND ACCESS TO PROPERTY

A. Comply with all rules and regulations of the City, state, and County authorities regarding closing or restricting the use of public streets or highways. No public or private roads shall be closed, except by express permission of the City and the controlling authority. Conduct the work to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved barricades, signs, and lights where necessary for the safety of the public. The convenience of the general public and residents and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.

B. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over. Temporary access driveways must be provided where required. Access to businesses, schools and homes along the route of the work shall always be provided by the Contractor.

C. Supply flagmen and guards or Police when they are required by regulation, when deemed necessary for safety, or required by the Engineer. Flagmen and Guards shall be furnished with approved orange wearing apparel and other regulation traffic control devices.

D. The Contractor shall be responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the

detour route) traffic control and other provisions, throughout the project as required by the City.

E. Traffic shall be maintained according to corresponding typical traffic control details. No streets shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

1.0.13. TRAFFIC CONTROL AND USE OF PUBLIC STREETS

A. The Contractor shall be responsible for traffic control as specified hereinafter. Any reference to the City, its departments, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over particular areas of streets or their departments, published regulations, permits, or data. Abide by all applicable laws, regulations and codes thereof, pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

B. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control and other provisions, throughout the project as required by the City of Opa-locka Public Works Department. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the Miami Dade County Public Works Manual. No street shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

C. If required by the Traffic Division, employ the required number of uniformed off-duty policemen to maintain and regulate the flow of traffic through the construction area. The number of men required and the number of hours on duty necessary for the maintenance and regulation of the traffic flow shall be subject to their approval. If required for traffic control permits or agencies, the Contractor shall work odd or night hours, as required for traffic control reasons, and the cost of such work shall be considered as incidental to construction.

D. The Contractor shall provide all barricades and/or flashing warning lights necessary to warn motorist of the construction throughout the project.

E. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times. Provide necessary access to all adjacent property during construction.

F. The contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Miami Dade County Public Works Manual. In addition, provide for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, attention is directed to the fact that vehicle loop detectors may have been embedded in the pavement. Verify these locations by inspecting the site of the work and by contacting the Sunshine 811, at 1-800-432-4770, (or by submitting an internet ticket entry via www.sunshine811.com). Any loop detector which is damaged, whether shown on the plans or not, shall be repaired or replaced to the satisfaction of the Traffic Division.

H. Notify the Traffic Division 24 hours in advance of the construction date, and 48 hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed and the swale or median area restored to their previous condition.

1.0.14. WORKING IN CONFINED SPACES

A. Where a Contractor needs to work in a confined space, the Contractor must comply with the General Industry, OSHA Confined Space Standard, 29 CFR 1910.146 or the equivalent Confined Space Standard in CFR 1926, Safety and Health Regulations for Construction Standards.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01018 ENVIRONMENTAL CONTAMINATION

PART 1 – GENERAL

1.0.1. ENVIRONMENTAL CONSIDERATINOS

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP and Miami-Dade County Regulatory and Environmental Resources Department.

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both the City and other authorities with jurisdiction. The Field Health and Safety Technician furnished by the Certified Industrial Hygienist or Environmental Engineer shall be present on the site during all construction in specialized construction areas unless the nature of the work is non-hazardous such that either the Site Specific Health and Safety Plan or the Certified Industrial Hygienist or Environmental Engineer authorizes his absence.

C. Disposal of any contaminated soils and/or groundwater must comply with all applicable federal, state and local requirements.

PART 2 – PRODUCTS

2.0.1. The Engineer of Record shall consult with the City regarding its requirement for material type (including pipe, fitting, gasket, valve interior coating, and the like) to be installed in contaminated areas.

PART 3 – EXECUTION

3.0.1. INSTALLATION REQUIREMENTS

A. The requirements of this Section shall be closely adhered to in all cases where proposed mains are to be installed in an area of hydrocarbon contamination. These requirements and those imposed by Miami-Dade County Regulatory and Environmental Resources Department or any other agency having jurisdiction an addition to, and take precedence over the City's standard specifications and standard details for ductile iron mains.

B. Contaminated backfill cannot be placed back into an existing trench. Contaminated fill shall be replaced with clean fill, hauled offsite and legally disposed of at a location which can handle the material.

C. The City may require gasketed joints be protected by encasing the entire joint with a hydrocarbon impermeable material. In this case, all joint gaskets shall be protected including those on pipe, fittings, valves, fire hydrants and specialty items.

END OF SECTION

01025 MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Payment for the various items in the Schedule of Payment items, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, taxes, materials, commissions, transportation and handling, bonds, permit fees, insurance, overhead and profit, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work, all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). Such compensation shall also include payment for any loss or damages arising directly or indirectly from the work.

B. The Contractor's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Schedule of Payment items or this Section, it shall include the cost for that work in some other applicable bid item, so that its proposal for the project does reflect its total price for completing the work in its entirety.

1.0.2. SUBMITTALS

A. Informational:

1. Schedule of Values: Submit schedule on City's form.

2. Application for Payment.

3. Final Application for Payment.

B. Submittals shall be in accordance with Section 01300 “Submittals” and the City’s standards.

1.0.3. SCHEDULE OF VALUES

A. Prepare a schedule of values for the work.

B. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.

C. Lump Sum Work:

1. Reflect schedule of values format included in conformed Bid Form.

2. List Bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.

D. An unbalanced or front-end loaded schedule will not be acceptable.

E. Summation of the complete schedule of values representing all the work shall equal the Contract Price.

F. The Contractor shall submit a Schedule of Values for review with the return of the executed Agreement to the Owner. The schedule shall contain the installed value of the component parts of work for the purpose of making progress payments during the construction period.

G. The schedule shall be given in sufficient detail for proper identification of work accomplished. The Schedule of Values shall directly correlate to each activity outlined in the construction progress schedule and the construction network analysis (specified in the section entitled "Submittals") to accurately relate construction progress to the requested payment. Each item shall include its proportional share of all costs including the Contractor's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.

H. If the Contractor anticipates the need for payment for materials stored on the project site or off-site in bonded warehouse, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the work items in the Schedule of Values. Payment for stored materials shall comply with requirements of General Conditions.

1.0.4. APPLICATION FOR PAYMENT

A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.

B. Use detailed Application for Payment Form provided by the City.

C. Include accepted schedule of values for each portion of work and the unit price breakdown for the work to be paid on unit price basis, and a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.

D. Preparation:
1. Round values to nearest dollar.

2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form.

3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand as applicable, and such supporting data as may be requested by Owner.

1.0.5. MEASUREMENT—GENERAL

A. Weighing, measuring, and metering devices used to measure quantity of materials for work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

B. Whenever pay quantities of material are determined by weight, material shall be weighed on scales furnished by Contractor and certified accurate by state agency responsible. Weight or load slip shall be obtained from weigher and delivered to the City or City's representative at point of delivery of material.

C. If material is shipped by rail, car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.

D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by the City. Each vehicle shall bear a plainly legible identification mark.

E. Materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.

F. Where measurement of quantities depends on elevation of existing ground, elevations obtained during construction will be compared with those shown on drawings. Variations of 1 foot or less will be ignored, and profiles shown on drawings will be used for determining quantities.

G. Units of measure shown on Bid Form shall be as follows, unless specified otherwise. All methods of measurement shall be approved by the City.

Item	Method of Measurement
AC	Acre – Field Measure
CY	Cubic Yard – Field Measure within limits specified or shown, or measured in vehicle by volume, as specified
EA	Each – Field Count
GAL	Gallon – Field Measure
HR	Hour
LB	Pound(s) – Weight Measure by Scale
LF	Linear Foot – Field Measure
LS	Lump Sum – Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
TON	Ton – Weight Measure by Scale (2,000)

1.0.6. MEASUREMENT AND PAYMENT

A. General:

1. Payment for all the work completed under this Project shall be made in accordance with the provisions of the "Special Conditions" on the basis of the specific provisions of this section of the Specifications.

2. DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.

3. The Contractor will be paid each month the value of the work completed during the preceding month (less retainage) and the invoiced cost including applicable sales taxes and shipping value (less retainage) of materials not already used, but which have been furnished by the Contractor under the Specifications, provided that such materials have been delivered, properly stored and inspected by the Engineer and that payment therefore has been satisfactorily certified by the Contractor to the Engineer. Remaining cost for materials (less retainage) will be paid at the same time as installation. Any payment for materials which are not used will be withheld from the final payment.

4. The Contractor shall receive and accept the compensation as provided in the Quotation, the ITB and "Invoices and Payments" of the "Special Conditions" as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the City.

5. The cost breakdown (or Schedule of Values) referred to herein is defined in "Schedule of Values" of the "Special Conditions." The cost breakdown (Schedule of Values) approved by the Engineer will be used as the basis for making progress payments and for determining the cost of extra work which is the same or similar (as determined by the Engineer) to that defined in the "Schedule of Values."

6. The prices stated in the Quotation includes full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.

7. Unless otherwise specifically stated elsewhere herein, the Contractor shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment and/or systems supplied by either the City or the Contractor and installed as a part of this Project. Further, any test materials supplied by the Contractor shall be completely satisfactory to the City. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the Engineer whose decision shall be final. Any material considered not suitable shall be immediately replaced by the Contractor with suitable material and no extra compensation will be allowed."

8. It is the intent of the City to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

9. For purposes of determining the monthly payments to be made to the Contractor for work accomplished, the value of the work completed shall be determined in the following manner:

    a. Excavation, installation of pipe, fittings, valves, catch basins, treatment structure, completed backfill, connection to existing mains and temporary paving repairs shall constitute seventy-five percent **(75%)** of the price bid for these Quotation Items.

b. Submittal of the PSM's daily progress reports and/or field book notes and monthly as-builts of the work that has been performed to date (all documents subject to approval and acceptance by the City) shall constitute ten percent **(10%)** of the price bid for these Quotation Items.

c. Completion of all sitework restoration, shall constitute five percent **(5%)** of the price bid for these Quotation Items.

d. Submittal of the final as-builts to the satisfaction of the Engineer, completion of all surface repairs, restoration of public or private facilities, appurtenances, and all other work not provided for under other Quotation Items shall constitute the remaining ten percent **(10%)** of the price bid for these Quotation Items.

B. Price Bid:

1. The price bid for each item shall be stated in both words and figures in the appropriate places in the Quotation form. All blank spaces for bid prices must be filled in with ink, or with a typewriter. The Bidder is further directed that any and all alterations, changes, corrections and modifications, made to the Quotation forms prior to submission of bids, must be initialed by the Bidder. Non-compliance by the Bidder of this directive may be grounds for rejection of his bid.

2. In the event that there is a discrepancy between the price written in words and the price written in numbers, the price written in words shall govern except where the number of units multiplied by the unit price shown in numbers equals the total price for that bid item. In such case the unit price shown in numbers shall govern over the unit price shown in words.

3. Where an error is made in the calculation of the total bid price of an item, the unit price shall govern.

4. If the bidder makes an error in his addition of the total bid prices of the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

5. It has been determined that the City is not exempt from the payment of Florida State Sales Tax under this Contract. All items of materials, equipment and supplies furnished by the Contractor and remaining a part of the completed Project are subject to this Tax. The Bidder shall include a sufficient amount of money to pay for this Tax in his bid price. Sufficient money to pay the Tax for all miscellaneous materials and minor items shown on the Plans, specified herein, or necessary for the work, and which will remain a part of the completed Project, shall also be included in the price or prices bid, and no other compensation will be provided.

C. Quotation Items:

It is intended that all work required to complete this Project will be included in the various bid items as follows:

Item No. 1

For performing preparatory work and operations in mobilizing for beginning the work of the Project, including preparation and acceptance of Maintenance of Traffic Plan (MOT), but excluding materials and permit costs, both of which are paid under other payment items, shall include, but not be limited to; preparation, submission and acceptance of the MOT, first by the City and if acceptable to the City, submission to and acceptance by all other governing authorities; supply, submission and correction of all "Pre-Approved Product Lists" and/or shop drawings; ordering the said equipment and materials in a timely fashion; those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities; the cost of reestablishing the design baseline, vertical control points and reference points, and establishing proposed pipeline location; the cost of MOT and permit preparation/submission/acceptance; the costs of bonds, required insurance and other preconstruction expense but excluding the actual cost of permits, which are paid under a separate dedicated allowance account and excluding the cost of materials which are paid under another bid item(s).

Not inclusive of the costs incurred in the provision of traffic control and the costs incurred in the provision of off-duty police officers that are to be paid for under separate Bid Items.

The mobilization item will be paid in the following manner:

Contracts with a contract duration of up to and including one hundred twenty (120) calendar days will be paid in two (2) separate payments, each equal to fifty (50) percent of the amount bid for this item.

Contracts with a contract duration of over one hundred twenty (120) calendar days will be paid in four (4) separate payments, each equal to twenty-five (25) percent of the amount bid for this item.

The two or four payments will be made with the first two or four payment draws and is conditioned upon progress satisfactory to the Engineer being made pursuant to the accepted Project.

The total amount of the partial payments may not exceed ten (10) percent of the original Subtotal of the bid items. Any remaining amount will be paid upon completion of all work on the Contract. Retainage, as specified in the "General Covenants and Conditions" and any Special Provisions will apply to these payments.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Items No. 2

For furnishing and constructing Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping the main; furnishing and installing pipe and fittings, including cutting and threading as required; gate valves; valve box and cover set in concrete; constructing concrete support slabs, installing guard post and Fire Hydrants; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 3

For demolishing and removal of damaged Fire Hydrant Assemblies for water mains as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. Such amount represents the amount the Contractor feels is necessary to completely demolish the damaged Fire Hydrant Assemblies.

Items No. 4

For adjusting rim elevation of existing water meter boxes to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 5

For adjusting rim elevation of existing water valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full

compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 6

For adjusting rim elevation of existing water ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 7 and 11

For furnishing and delivering to the City HDPE pipe and pipe fittings for sewer force main of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 8 and 12

For installing HDPE pipe and pipe fittings for sewer force mains of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the

job site (trench side) and placing them into position in the trench; installing HDPE pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Item No. 9 and 10

For making a connection to an existing sewer force main at:

NW 135th Street (STA 43+88±)

Including furnishing and installing all fittings necessary for tapping sleeve connection to existing sewer force main, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of City forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to, exploratory excavation to verify the main size; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping sleeve connecting the proposed sewer force main to the existing main; furnishing and installing any required pipe and fittings; installing solid sleeves; making thrust restrained joints; furnishing all materials and equipment required to clean and test the connection; cleaning and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with City forces; field locating utilities; protecting existing utilities; satisfying permit conditions; bypass pumping and/or sewer tankering of sewer flows interrupted during the sewer force main connection procedure, if required; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 13

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 14

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 15

For furnishing and delivering to the City HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 16

For installing HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each

complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 17

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 18

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 19

For furnishing and delivering to the City flushing valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of flushing valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing flushing valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs;

and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 20

For installing flushing valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing flushing valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 21

For furnishing and delivering to the City Automatic Air Release Valve Assemblies (AARVs) for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ARV valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing ARVs; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 22

For constructing Automatic Air Release Valve Assemblies (AARVs) for sewer force mains at the locations shown on the plans, or where directed by the Engineer in the field, complete as shown in the Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; furnishing and installing automatic air release valves, corporation stops, saddles, bronze couplings, stainless steel ball valves, including cutting and threading as required, manhole frames and covers, bricks, riser pipes; transportation and handling costs; tapping the main; placing and compacting backfill; furnishing additional backfill material, if required; constructing concrete support slabs; temporary paving; permanent

paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 23

For furnishing and delivering to the City mechanical joint plug valves for sewer force main, and valve boxes & lids, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of plug valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint plug valves; furnishing valve box & lid for plug valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 24

For installing mechanical joint plug valves for sewer force main, manhole, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 25

For adjusting rim elevation of existing sewer valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 26

For adjusting rim elevation of existing sewer ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 27, 29, and 31

For furnishing and delivering to the City HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE corrugated pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 28, 30, 32

For installing HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; HDPE corrugated pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the

Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Items No. 33

For furnishing and installing thec two (2) StormSafe Vaults model SSV40-2-000 by FABCO Industries, Inc., as specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSafe Vaults specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 34

For furnishing and installing the StormSack Plus model PSS1626-1E-000 by FABCO, specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSack Plus specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in

another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 35

For demolishing and removal of stormwater treatment structure as indicated in the plans, will be paid for from will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove the existing stormwater structure.

Items No. 36

For furnishing and delivering the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for furnishing all necessary structures specified on plans, transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 37

For installing the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary structures specified on plans, including making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 38

For repairing damaged structures for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 39

For adjusting rim elevation of existing stormwater structures to meet proposed grate and replace covers, in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 40

For furnishing and installing reinforced concrete headwalls at stormwater outfall per FDOT index No. 250, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the headwall at the pipe outfall.

Item No. 41

For furnishing and installing rubble (Broken Stone), including necessary geotextile filter fabric, at outfall embankment for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of tons of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 42

For furnishing and installing sand-cement bags for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of Cubic Yards of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 43

For furnishing and installing manatee grate for 36" pipe for stormwater outfall, will be paid for from the unit price amount established by the Contractor for this purpose, as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 44

For furnishing and installing 36-inch in-line check valves for sewer force main, including valve boxes, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 45

For excavating of existing backfill material at existing site location for grading for the roadway improvements along Cairo Lane and NW 127th Street, maintaining access to residences and businesses along the route of the excavation; protecting existing utilities along the route of the excavation, will be paid for at the unit price bid times the number of cubic yards removed to the satisfaction of the Engineer.

Item No. 46

For furnishing and installing additional suitable backfill material for grading for the roadway improvements along Cairo Lane and NW 127th Street, will be paid for at the unit price bid times the number of cubic yards of additional backfill furnished and installed as directed by the Engineer in the field and includes removal of loading, hauling, placing and compacting the backfill.

Item No. 47, 53, and 56

For cold milling roadway surface course for permanent pavement repairs of the nominal thickness specified in plans, will be paid for at the unit price bid times the number of square yards of such surface course milled and required as measured along the curb within the limits defined by details on the Plans and/or the City's Public Works Manual appended hereto and as approved by the Engineer. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for milling of surfaces indicated. Asphalt cold milling shall be performed using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final.

Item No. 48

For selling and delivering concrete for the installation of 8-inch Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for furnishing

concrete for the installation of Concrete Pavement, transportation and handling costs delivered ditchside. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 49

For constructing 8-inch-thick Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the Concrete Pavement. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 50

For constructing permanent pavement repairs for roadway (nominal 3.5-inch thick machine-laid asphaltic base course surface overlay type B-12.5) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 51

For constructing permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic pavement surface overlay type SP-12.5, PG-76-22) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 52

For constructing permanent pavement repairs for roadway (nominal 1-inch thick machine-laid asphaltic friction course surface overlay type FC-12.5, PG-76-21) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 54

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1-inch-thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include asphalt pavement driveways in roadways, as required and directed by the Engineer. After the pavement has been

milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 55

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include placement of 8-inch base material for pavement installation, as required and directed by the Engineer. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 57

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1.5-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 135th Street, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 58

For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, will be paid for at the unit price bid times the number of square feet of such sidewalk required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 59

For furnishing and constructing 6-inch concrete driveway approaches to match existing, will be paid for at the unit price bid times the number of square feet of such driveway required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 60

For constructing concrete curb and gutter restoration to match existing, will be paid for at the unit price bid times the number of linear feet of such curb and gutter required and placed as measured along the curb, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Item No. 61

For furnishing and constructing concrete valley gutter, will be paid for at the unit price bid times the number of linear feet of such valley gutter required and placed as measured along the street, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Items No.62

For installing General Guardrail per FDOT index No. 536 with mechanical appurtenances required as specified in these bid items will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing General Guardrail per FDOT index No. 536; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 63

For furnishing and installing pavement markings as indicated in Plans, will be paid for from the aggregate sum amount bid by the Contractor for this purpose. Such amounts represent the amount the contractor feels is necessary to comply with the governing agency's requirements. Reflective Pavement Markers and signings shall also be furnished and installed under this item and there will be no additional compensation paid for this work.

Items No. 64

For demolishing and removing of existing curb and gutter of the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear feet of curb and gutter established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove median curb and gutter.

Items No. 65

For removing and disposing existing trees located at the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear trees removed. Such amount represents the amount the Contractor feels is necessary to completely remove and disposal.

Item No. 66

For furnishing traffic control, will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to provide sufficient flagmen, signs, barricades, and similar items and work for directing traffic and maintaining safety during all times of work and other times as directed by the Engineer, the municipalities' Public Works Department and any other governing authority. Any portion of this fund remaining after all authorized payments have been made will remain with the Contractor. Conversely, no requests for additional payments will be approved.

Payment to the Contractor under this item will be by monthly percentage corresponding to the percentage of the Project's work items completed and paid for each month, as approved by the Engineer.

Items No. 67 – Dedicated Allowance

For repairing damaged Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 68 – Dedicated Allowance

For furnishing and replacing damaged Fire Hydrant Assemblies at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of damaged Fire Hydrant Assemblies replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, removal and disposal of damaged fire hydrant if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 69 – Dedicated Allowance

For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball

valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 70 - Dedicated Allowance

For repairing damaged water meters at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 71 - Dedicated Allowance

For furnishing and replacing water meters for service connections at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves and meters; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 72 - Dedicated Allowance

For repairing damaged catch basins for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Item No. 73 - Dedicated Allowance

For sheeting and shoring ordered left in place by the Engineer, will be paid for at the unit price bid per square foot, measured from tip to cut-off times the horizontal length, regardless of thickness, times the number of linear feet of sheeting and shoring left in place as accepted by the Engineer. Payment shall be full compensation for cutting off and for all salvage and potential reuse value of the material. Sheeting and shoring left in place without the Engineer's approval will be at the Contractor's expense.

Item No. 74 - Dedicated Allowance
For removal, transport, and legal disposal of above-ground debris, including tipping fees, will be paid for at the unit price bid times the number of cubic yards removed and legally disposed of, as measured by the truckload to the satisfaction of the Engineer.

Item No. 75 - Dedicated Allowance
For restoring sodded areas, will be paid at the unit price bid times the number of square yards of sod placed, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete restoration.

Item No. 76
Sum of Item Nos. 1 through 75.

Item No. 77 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of providing off-duty police officers as required for this project. Payment shall only reimburse the Contractor for the cost of the off-duty police officers for hours on duty at the work site; no overhead, travel time or other additional costs will be allowed. Any portion of this fund remaining after all authorized payments have been made will be withheld from contract payment and will remain with the City.

Item No. 78 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of all required construction permits and fees, if authorized by the Engineer. Payment shall reimburse the Contractor for only the cost of the construction permit and fee. Any question or whether a construction permit or fee is required shall be decided by the Engineer whose word shall be final. Any portion of this fund remaining after all authorized payments have been made will be withheld from Project payments and will remain with the City.

Item No. 79 - Contingency Allowance
For unforeseen conditions, minor construction changes and Quantity Adjustments, additional work not covered by other items, if ordered by the Engineer.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to unforeseen conditions, unforeseen conflicts between existing elements of work and the proposed work; for minor changes required to resolve any unforeseen conditions, Revised Regulations, Technological and Products Development, Operational Changes, Schedule Requirements, Program Interface, Emergencies and other Miscellaneous Costs; and for adjustments to estimated quantities shown on the unit prices of the Quotation to conform to actual quantities installed; and associated time related to this work only if ordered by the Engineer.

Payment to the Contractor under the Contingency Allowance will only be made for work ordered in writing by the Engineer, in accordance with Section 13 "Extra Work and Payment Therefore" of the "General Covenants and Conditions." Any portion of these accounts remaining after all authorized payments have been made will be withheld from Contract payments and will remain with the City.

A non-compensable time extension shall be included in the Contingency Allowance work when approved by the Engineer.

Item No. 80 - Contingency Allowance
Due to ongoing permitting efforts, additional changes to the bid set drawings might be necessary. This will be incorporated into the conformed set drawings, and any additional expenses or costs for the contractor due to these changes shall be reflected in this item.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to additional changes due to ongoing permitting efforts.

Item No. 81 - TOTAL BID
Sum of Item Nos. 76, 77, 78, 79, and 80.

1.0.7. NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.

2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.

3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.

4. Material not unloaded from transporting vehicle.

5. Defective work not accepted by Owner. Material remaining on hand after completion of work.

1.0.8. PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless shop drawings or preliminary operation and maintenance manuals are acceptable to the Engineer.

B. Final Payment: Will be made only for products incorporated in work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.0.9. ALLOWANCES

A. The allowances shall be used only at the discretion of and as ordered by the Owner for such items as unforeseen conditions, unforeseeable conflicts between existing elements of work and the proposed work, unit price items exceed estimated quantities, and any associated work requested by the Owner including all labor, materials, and services for modifications or extra work to complete the project that was anticipated, but not specifically included in this Contract.

B. Any portion of these allowances that remain after all authorized payments have been made will be withheld from contract payments and will remain with the Owner.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01031 GRADES, LINES AND LEVELS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work of this Section comprises the establishing of grades, lines and levels.

1.0.2. RELATED WORK

A. Section 01720 “Project Record Documents”

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Furnish all stakes, templates and other materials necessary for establishing and maintaining of the lines and grades necessary for control and construction of the work and all incidental labor necessary for the prosecution of the work.

PART 3 – EXECUTION

3.0.1. LAYOUT OF THE WORK

A. GENERAL

1. The Engineer of Record, through retaining the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida, shall furnish the Contractor with horizontal and vertical controls which shall be utilized as specified elsewhere herein to layout the work. The Professional Land Surveyor and Mapper, who is licensed in the State of Florida hired by the Contractor, shall verify all controls provided by the Engineer of Record and it shall be the responsibility of the Contractor to preserve same.

2. The Contractor shall retain the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida who, shall furnish and set stakes, establishing line and grade and shall solely be responsible for the layout of the work as well as the recording of all as-built dimensions and elevations. The Contractor shall furnish all additional stakes, templates, and other materials for marking and maintaining survey points and lines given, and shall be responsible for their preservation. Should any of the horizontal and vertical control points set by the Engineer of Record be destroyed or disturbed, they shall be reset by the Contractor's Florida Registered Land Surveyor and Mapper, at the Contractor's expense. All control points previously set by the Engineer of Record shall be verified by the Contractor's surveyor.

B. LAYOUT

As provided in Subsection 3.01-A, above, the Contractor through the services of his Florida Registered Land Surveyor and Mapper, shall establish the line and bench mark and other reference points for the pipeline or structure, as follows:

1. Structures: Will consist of baselines, stakes at building corners, centers and centerlines, auxiliary lines and two bench marks from which to establish the elevations. The Engineer of Record shall set a minimum of three horizontal and vertical control points which shall thereafter be maintained by the Contractor, without further help from the Engineer of Record, for use in establishing and checking the lines and grades as shown on the contract drawings.

2. Pipelines: Will consist of baselines, construction lines, centerlines, auxiliary lines and bench marks from which to establish the elevations. The Engineer of Record shall set horizontal and vertical control points at the beginning and end of the work and at a minimum distance of 1,400 ft. in between. When the total distance is less than 1,400 ft. control points shall be set at the beginning and end of the work.

3. The Contractor shall use this information to construct the structures and pipelines to the lines and grades shown on the project drawings and shall supply all equipment and personnel necessary to accomplish this end.

4. For pipelines, this will consist of establishing all points of bend (but not necessarily bevel pipe unless in close proximity to other facilities), valves, tees, crosses and other stations not more than 100 feet apart along the proposed centerline of the pipe, or along a stationed offset line as shown on the plans, marked by a nail in a metal cap if in pavement, with the station painted nearby or by a nail in the top of a wooden stake driven flush with the ground with the station marked on the flag stake nearby, if not in pavement.

5. The Contractor shall supply the City Inspector with a copy of the Florida Registered Land Surveyor and Mapper's layout of the work immediately upon its availability to his own forces.

6. The Contractor shall make his equipment and men available to the Inspector for spot checking the accuracy of the pipe laying. The Inspector shall require the Contractor to correct pipe alignment when necessary.

C. RECORD DRAWINGS:

1. During the entire construction operation, the Contractor shall retain the services of a State of Florida Registered Land Surveyor and Mapper who shall maintain

records of the installation, including all deviations from the plans and specifications by obtaining "as-built" dimensions and elevations.

2. The Surveyor shall prepare Record As-Built Drawings showing correctly and accurately all changes and deviations made during construction, including approved construction variances, to reflect the work as it was actually constructed.

3. Refer to Sections 01720 and 01725 for City's criteria for developing project record documents and record As-Built drawings.

D. HORIZONTAL AND VERTICAL CONTROL FOR DESIGN

The following shall apply when establishing horizontal and vertical controls for design. They shall also be used for the development of construction drawings.

1. Survey stationing shall proceed from south to north and/or from west to east.

2. Baseline or centerline shall be tied to section corners, or to monument lines or to right of-way lines.

3. Points along the survey line shall be referenced to perpetuate the alignment. Whenever possible, the reference points shall be established at right angles to the survey line and at intervals no longer than 1,400 feet. Reference points shall be shown on construction plans.

4. Centerline of side streets shall be established and set by nail and disc. Station and angle turned shall be given and shown on the plans.

5. All curve data (horizontal) shall be shown on plans. Point of curvature and point of tangency shall be set in the field, reference P.C. and P.T. or P.I.

6. Easement lines shall be tied to baseline or centerline. Give station and angle turned.

7. Set centerline or baseline stations every 100 feet on the ground using iron rods in unpaved areas or P.K. nails on asphalt.

8. All vertical control and elevations shall be referenced to North American Vertical Datum of 1988 (NAVD 1988).

9. Temporary bench marks (T.B.M.) and bench marks shall be established throughout the project at approximately 1,000 feet intervals. Show information on plans.

10. Centerline shall be tied to baseline if different from each other.

11. Tie proposed pipe to centerline or baseline, not to right-of-way line. Right-of-way line shall be tied to centerline or baseline.

12. All survey information shall be shown on the plans.

13. All point of intersections and deflection angles shall also be shown. Angle can be submitted by bearings.

END OF SECTION

01070 ABBREVIATIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Comply wherever in these specifications' references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

B. It is the intent of the Department to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. ABBREVIATIONS AND ACRONYMS

A. The Contractor is also alerted that various "Standards" are used herein for reference and criteria, and that he should obtain copies for his general use and protection. Abbreviated titles are used throughout these Specifications and although most of them are widely known, their complete titles are given below in order to avoid any misunderstanding.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
FAC	Florida Administrative Code
FBC	Florida Building Code
FDOH	Florida Department of Health in Miami-Dade County
FDOT	State of Florida Department of Transportation
MDDTPW	Miami-Dade Department of Transportation and Public Works
NSF	NSF International
OSHA	Occupational Safety and Health Administration

B. The above list shall not be considered complete, as there are other "Standards" used; however, in most cases complete titles have been given.

C. Wherever "Standards" are indicated herein for reference, the referenced portion shall have the same force and effect as if it were included, herein, in its entirety, latest revision if the date of publication is not shown.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01090 REFERENCE STANDARDS

PART 1 – GENERAL

1.0.1. REFERENCE STANDARDS

A. Comply with the requirements of standard with date as specified herein. Standards without dates shall be understood as the Standard current at the time of bid. In case of conflict between the referenced standards, the one having the more stringent requirements shall govern.

B. In case of conflict between the referenced standards and the Project Documents, the Project Documents shall govern.

C. When no reference is made to a code, standard, or specification, the standard specifications of the ASTM, the ANSI, the ASME, the IEEE, or the NEMA shall govern.

1.0.2. QUALITY ASSURANCE

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents or applicable codes establish stricter standards.

1.0.3 ABREVIATIONS

A. Abbreviated titles for other governing standards are used throughout these specifications and although most of them are widely known, their complete titles are given below to avoid misunderstanding.

1. AA: Aluminum Association.

2. AAMA: Architectural Aluminum Manufacturer's Association.

3. AASHTO: American Association of the State Highway and Transportation Officials.

4. ACI: American Concrete Institute.

5. ACPA: American Concrete Pipe Association

6. AI: Asphalt Institute

7. AIA: American Institute of Architects AISC American Institute of Steel Construction

8. AISI: American Iron and Steel Institute

9. AITC: American Institute of Timber Construction

10. ANSI: American National Standards Institute, Inc.

11. API: American Petroleum Institute

12. ASCE: American Society of Civil Engineers

13. ASME: American Society of Mechanical Engineers

14. ASMM: Architectural Sheet Metal Manual

15. ASSE: American Society of Sanitary Engineers

16. ASTM: American Society for Testing and Materials

17. AWS: American Welding Society

18. AWWA: American Water Works Association

19. BHMA: Builders Hardware Manufacturer's Association

20. CIPRA: Cast Iron Pipe Research Association

21. CLFMI: Chain Link Fence Manufacturers Institute

22. CMA: Concrete Masonry Association

23. DIPRA: Ductile Iron Pipe Research Association

24. ETL: Environmental Test Laboratories

25. FDEP: Florida Department of Environmental Protection

26. FDOT: Florida Department of Transportation

27. IEEE: Institute of Electrical and Electronics Engineers

28. NBS: National Bureau of Standards

29. NEC: National Electrical Code

30. NEMA: National Electrical Manufacturer's Association

31. NFPA: National Fire Protection Association

32. OSHA: Occupational Safety and Health Administration

33. SSPC: Steel Structures Painting Council

34. SSPWC: Standard Specifications for Public Works Construction

35. SFWMD: South Florida Water Management District

36. UL Underwriters Laboratories, Inc.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01100 SPECIAL PROJECT REQUIREMENTS

PART 1 – GENERAL

1.0.1. RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall have at all times as his agent on the site of the work a competent superintendent capable of reading and thoroughly understanding the plans and specifications.

B. The Contractor shall be responsible for the good condition of the work or materials until formal release from his obligations under the guidelines of this project. The Contractor shall store materials and shall be responsible for and shall maintain partly or wholly finished work during the continuance of the Contract. The Contractor shall place sufficient lights and danger signals on or near the work from sunset to sunrise; shall erect suitable railings or other protective devices about unfinished work, open trenches, embankments, or other obstructions; shall provide all necessary watchmen on the work by day or by night for the safety of the public and shall take all necessary precautions for preventing accidents or injuries to persons or property in or about the work.

C. The Contractor shall be responsible for the coordination, location, and relocation of utilities, including but not limited to utility light poles, cables, fiber optic lines, water mains and services, sewer mains and services, electrical, telephone and television cables, signals and signal poles, fences, guard rails, piping, conduits and drains that interfere with the positioning of the work as set out on the drawings. The cost of all such coordination and relocations shall be included in the bid for the project and shall not result in any additional cost to the City.

D. Prior to proceeding with trench excavation, the Contractor shall contact all utility companies and all other users of the right-of-way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three NORMAL WORKING DAYs before starting construction. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground utilities may be determined.

E. Wherever piping systems or utilities such as water, wastewater, air, chemical, electrical or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the drawings. Approximate locations of known installations in the vicinity of new work must be verified in the field by the Contractor, who shall uncover them carefully, prior to commencement of the work.

F. The Contractor shall be familiar with all codes and regulations of the Federal Government, the State of Florida, Miami Dade County, the City of Opa-Locka and any municipal corporations applicable to every aspect of the project. The Contractor shall provide all materials and shall perform all work necessary to fully comply with all provisions and requirements of applicable codes and regulations whether specifically indicated in the plans and specifications or not. It is the intent of the City to obtain a finished project in full compliance with all requirements of any agencies having jurisdiction over any portion of the work involved in the project. The Inspector will not recommend acceptance of the work until all requirements and provisions of pertinent codes and regulations have been satisfactorily fulfilled.

G. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

H. Any Conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.2. LAND FOR CONSTRUCTION PURPOSES

A. The Contractor shall limit operations, temporary facilities and storage of equipment and materials to on-site areas to be designed by the Engineer.

B. Should the Contractor require additional space he/she shall make his own arrangements for storage of materials and equipment in locations off the construction site. For the allocated space, submit to the Engineer for approval, proposed plan and layout for all temporary facilities, offices, storage facilities, temporary water service and distribution, and temporary power service and distribution. Prior to commencing any new construction remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, utility systems, plantings and all other existing installations. All of these existing features shall be restored to their initial or better than initial conditions.

1.0.3. PRE – CONSTRUCTION CONFERENCE

A. After the Award of Contract and prior to the issuance of the "Notice to Proceed," a preconstruction conference will be held with the Contractor, the Department, various utility companies and others who are interested in the Project for the purpose of coordinating the work. The time and place of meeting will be set by the Engineer.

B. In some cases the preconstruction conference may be held after the start work date stated in the written "Notice to Proceed." This may be due to difficulty with coordination of all parties concerned, or other similar reasons.

C. Such delays in holding the preconstruction meeting will not relieve the Contractor of any responsibilities hereunder, and will not be an acceptable reason for him to request additional work completion time beyond that provided since he can be obtaining permits, mobilizing his equipment and forces, ordering materials, performing minor work, or other work if approved by the Engineer, during the interim period.

D. Prior to the preconstruction conference, the Contractor shall prepare the construction schedule as described in Section 01120 - Sequence of Construction and General Information and Section 01200 - Project Meetings, "Project Scheduling" and provide copies of the same to others in attendance.

E. The construction schedule shall include the place of beginning, the proposed order of progression, together with the estimated times for beginning and completing the various items of work. In addition, the Contractor shall prepare on electronic media, a critical path method (CPM) with emphasis made to "construction time and completion."

F. The Engineer will discuss requirements of such matters as project supervision and inspections, progress schedules and reports, Contract Change Orders, insurance, safety, and other items pertinent to the Project.

G. All parties to this conference should be prepared to discuss any problems anticipated with the execution of the work under this Contract.

1.0.4 SAFETY REQUIREMENTS

A. The Contractor shall comply with the Department of Labor Safety & Health Regulations for construction promulgated under the Occupational Safety & Health Act of 1970, (PL 91-596).

B. Comply with all applicable provisions of the Occupational Safety and Health Act (OSHA). The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for review before Notice to proceed will be issued.

C. Conduct operations in such a manner, utilizing warning devices, such as traffic cones, barricades and warning lights, that traffic and pedestrians are given adequate warning of hazard of the work site as may be deemed necessary by the City and/or the Engineer.

D. Certain products specified in these specifications contain warnings by the manufacturer that under certain conditions, if instructions for use of the product are no followed, a hazardous condition may develop. It is the Contractor's responsibility to instruct its workmen in the safe use of the product, or any product substitution.

E. For trench excavations in excess of five feet in depth, the Contractor shall comply with the provisions of the State of Florida "Trench Safety Act".

F. The contactor shall be familiar with the “Underground Facility Damage Prevention and safety Act”, Florida Statute 556. The Contractor shall contact the Sunshine State One Call Center of Florida.

G. Do not store any environmentally hazardous materials such as solvent, greases, lubricants or any other type of chemical substances at the work sit. The Contractor is permitted to keep such materials at the site as are for immediate use only. Do not store any empty container at the site.

1.0.5 PIPE AND EXISTING UTILITIES

A. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

B. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving and similar items for which a pay item was established in the quotation, then such additional work and items will be paid for at the prices bid. Wider trench widths may be paid with the approval of the Engineer.

C. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

1.0.6 MATERIALS AND EQUIPMENT FURNISHED BY THE CITY

A. No material or equipment will be furnished by the City under this Contract. All material, labor and equipment necessary for completion of the work shall be furnished and installed by the Contractor, whether or not shown on the Plans or specifically mentioned in the Specifications.

1.0.7 WATER USED IN CONSTRUCTION

A. The City will furnish water at a charge for all construction activities unless otherwise specifically made an exception in the project specifications or specifically made an exception by the Engineer in writing.

B. Consumption for the following activities shall be determined by City personnel who shall be provided with a minimum of seventy-two (72) hour advance notification. Failure of the Contractor to provide advance notification and/or have City personnel on site to witness and verify consumption for the following activities could result in his being fined and/or a citation being issued against him in accordance with the Rules and Regulations of the City's Tampering Section.

1. Pigging:

2. Flushing, only if and when approved by the Engineer:

3. Chlorination, if applicable:

4. To fill mains being pressure tested, excluding make-up water during test: and

5. When and where directed or approved by the Engineer.

Water for construction activities listed above will be furnished from adjacent City-owned water mains or the most convenient water source. In instances where no City-owned source of water is available, the Contractor shall make his own arrangements with the municipality or other controlling authority and include the cost of all water required during construction in his overall construction cost. No reimbursement will be made.

C. Water used in construction for purposes other than those listed above, including make-up water pumped into the pipe during hydrostatic testing, will be furnished by the City at a charge. This water will be supplied from the most convenient source through the existing piping. However, all water used must be metered through a City meter. The Contractor will be billed by the City based on water usage recorded by the floating meter.

D. When the project is occurring in the City of Opa-Locka, the Contractor shall present to the City, the Fire Department Permit during application with the New Business Office.

E. All piping, fittings, valves and equipment, including pumps and power, required for handling the water shall be furnished by the Contractor. Care shall be exercised in the use of the water and provision shall be made to protect the water supply for contamination and indiscriminate use by unauthorized persons. The Contractor shall use only potable water unless otherwise specifically called out elsewhere herein and then only in the case of sewage force mains, reclaimed water mains or raw water mains.

F. Under no circumstance shall the Contractor utilize a water source, including existing piping, until such source or piping has been approved for use by the City.

1.0.8 MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR

The general requirements specified herein shall apply to all items of materials and equipment in addition to the Specifications for individual items appearing in the following sections:

A. All materials and equipment furnished by the Contractor for use in the work shall be new and of recent domestic manufacture, and shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for at least five (5) years. All components shall, wherever possible, be standard stock articles of well-known domestic manufacturers. Where the plans and specifications designate the product of a particular manufacturer, the product specified has been found suitable for the intended use, but, unless otherwise provided, articles or products of similar characteristics may be offered for the approval of the Engineer. A minimum of six copies (more if so required herein) of complete descriptive data shall be furnished regarding all articles furnished by the Contractor. The descriptive data shall consist of dimension drawings, catalog references and other information necessary to clearly identify each article. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense and shall be solely responsible for all cost and time required by any difference in construction methods, fabrication or assembly required and no additional time will be allowed. Any re-permitting together with all costs and work associated therewith shall be performed by the Contractor and no additional compensation will be allowed.

B. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. All water system components shall be in full compliance with NSF/ANSI 61, "Drinking Water System Components - Health Effects," latest revision.

D. The Contractor shall also supply certification that all materials supplied that will come into contact with drinking water conform or will conform with NSF/ANSI 61.

E. The Contractor shall care for and protect against loss or damage all material and equipment to be incorporated in the construction, whether furnished by him/her or by the City, for the duration of the Contract, and shall repair or replace any lost or damaged items. The Contractor shall be relieved of such responsibility only upon final acceptance of all of the work by the Engineer.

F. No material shall be stored so that it is in direct contact with the ground. All metal shall be thoroughly cleaned before being placed in the work. Storage and protection measures shall be subject to approval of the Engineer whose decision shall be final.

The Contractor shall immediately protect materials by different methods, materials or to a greater extent if so, directed by the Engineer in the field.

G. Unless otherwise specified or noted on the plans, all steel bolts, nuts, washers, eye bolts, tie rods and all other miscellaneous ferrous metal items shall be American made stainless steel.

H. The Contractor shall have available sufficient tools and equipment to properly perform his work in all areas of the system, including easements or other areas with limited or restricted access or clearances. The Contractor is specifically advised that work in easement may require specialized equipment to satisfactorily perform the work and the capability to accomplish these installations is a requirement of these specifications.

I. Any salvageable pipe, fitting, or other miscellaneous material or equipment, removed during construction and not reused in the work shall be cleaned, hauled to and stored by the Contractor at his expense, where directed by the Engineer, and shall remain the property of the City. All other material and equipment shall be disposed of by the Contractor at his own expense.

J. To ensure satisfactory and successful final painting of materials and equipment to be furnished, it is essential that the paints applied in the shop and in the field be mutually compatible. To this end, the Contractor shall require that the shop paints be applied to materials and equipment be compatible with the paints he proposes to use in the field or shall determine what shop paints have been used and select field paints compatible therewith, all as approved by the Engineer.

K. The Contractor shall furnish the City, with one set of any special tools required for servicing for each type of equipment actually furnished. These tools shall be delivered to the office of the City's Construction Manager, City of Opa-Locka Public Works. A letter of transmittal shall be provided, containing a list of all items being provided.

L. All other material required to complete this project shall be furnished and installed by the Contractor, whether or not shown on the plans or specifically mentioned in the specifications.

M. The Contractor shall procure extended manufacturer's warranties on equipment furnished by him. These warranties shall be kept in force and extended such that the City will be provided a manufacturer's warranty with at least one year to run beyond the date of final acceptance of the project. A copy of the warranty with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warranty/certification is delivered to the Engineer.

1. The warranty shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warranty shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

2. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warranties or certifications of warranty extensions showing the warranties to be in effect at least one year beyond the planned date of final acceptance.

3. All costs for procuring, maintaining and extending these warranties shall remain with the Contractor, even in cases where the contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

4. In instances, where the City puts an item of equipment into full productive service prior to final acceptance, the warranty shall still be extended to at least one year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warranty from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warranty cost will be reimbursed, no overhead or other costs will be allowed.

N. Extended Warranties:

1. The Contractor shall procure extended manufacturer's warrantees on equipment furnished by him. These warrantees shall be kept in force and extended such that the City will be provided a manufacturer's warrantee with at least one (1) year to run beyond the date of final acceptance of the Project. A copy of the warrantee with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warrantee/certification is delivered to the Engineer.

2. The warrantee shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warrantee shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent

and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

3. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warrantees or certifications of warrantee extensions showing the warrantees to be in effect at least one (1) year beyond the planned date of final acceptance.

4. All costs for procuring, maintaining and extending these warrantees shall remain with the Contractor, even in cases where the Contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

5. In instances where the City puts an item of equipment into full productive service prior to final acceptance, the warrantee shall still be extended to at least one (1) year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warrantee from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warrantee cost will be reimbursed, no overhead or other costs will be allowed.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01120 SEQUENCE OF CONSTRUCTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. The sequence of construction has been divided into phases and steps representing major work areas, all of this in order to facilitate to the Contractor the execution of the project and minimize conflicts with operations. The general sequence of construction shall be as described in this Section, but also the City reserves the right to make changes on it.

B. Coordinate sequence of construction with progress schedule to ensure timely performance of the work and project completion within the specified construction time.

C. Special Instructions: It is the intent of the City to construct this project with as little disturbance and annoyance to the pump station's neighbors as possible.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City.

E. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

F. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

1.0.2 GENERAL

A. Following receipt of "Notice to Proceed" with the work, the Contractor shall notify the Engineer at least five (5) days before he is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipe location in accordance with Section

02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”, Construction Methods.

C. The Contractor's equipment must be in first class operating condition, including safety features, proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment.

D. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

E. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

F. All items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a completed Project.

G. Water in the trench shall be kept below the level of the pipe to prevent the entry of debris and contaminants into the pipe.

    1. In instances where Section 02220 – Excavation, General, "Alternate Method of Construction" is approved by the Engineer and used for the Project: During construction, the Contractor shall install a temporary plug, or other means approved by the Engineer, on the open end of the pipe in order to prevent debris and trench water backwash from entering the pipe during trench excavation ahead of the installed pipe. The plug shall remain in place until the following length of pipe is ready to be installed. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

H. No separate payment shall be made for the cost of labor and materials required for the removal of nightcaps, plugs, bulkheads or external blocking and bracing of adjacent mains, for the supplying of water for cleaning and testing, nor for the interconnecting work to adjacent mains unless listed separately in the Quotation, and the cost of this work shall be included in other applicable items of work.

I. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer in writing, no extension of Project time will be allowed due to such a shutdown. If any extension of time is allowed, it will be of a non-

compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

J. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours effects the work of the Contractor, the Contractor's sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

K. New or altered potable water mains, including services, that will be under City control and have an inside diameter of three inches or larger shall be disinfected and bacteriologically evaluated in accordance with FAC Rule 62-555.340. Note that the above requirements are minimum, and the City may require more stringent procedures and routinely requires all services of whatever size be tested and disinfected along with the main. These more stringent or extensive requirements shall be performed by the Contractor and no extra compensation will be allowed.

L. All pipe and fittings installed under this project shall be color coded or marked as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water and green as the predominant color for sanitary sewage facilities. Underground metal or concrete pipe shall have colored stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Striping shall be continuous and run the full length of the pipe. Aboveground pipe shall be painted shall be color coded or marked like underground pipe.

M. The Contractor shall take steps to provide accessibility for local traffic. The construction in this area shall proceed as quickly as possible and paving shall follow immediately to reduce inconvenience to residents in this area of the project.

N. The Contractor shall take pictures of the work site, in accordance with Section 01380 "Construction Photographs," prior to the start of any construction.

O. The Contractor is advised that, during the construction of the Project, the Construction Manager may require the Contractor to adjust the location of the proposed valves. This relocation(s) shall be performed at no additional cost to the City.

P. Locations of solid sleeves are for general information only. Exact location of solid sleeves shall be determined in the field by the Engineer. Prior to installation of solid sleeves, the pipe and fittings shall be hosed and kept clean, then swabbed with disinfectant as necessary for water main installation. Water in trench shall be kept below the pipe invert.

1.0.3 EXISTING WATER MAINS AND FORCE MAINS

A. The existing mains in the project area shall remain in service until the new mains are placed in service. Connections and disconnections together with cut, plug and abandonment work shall be coordinated through the City's Construction Manager. In all instances, the City's Construction Manager shall, beginning with the Preconstruction Meeting, coordinate with the Operations Division to pre-determine the notification lead times required for various operations.

1.0.4 SEQUENCE OF WORK

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. CAPITALIZED ITEMS INDICATE WORK OR FUNCTIONS TO BE PERFORMED BY CITY FORCES. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to any excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

11. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

12. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

13. The general sequence of work shall be as follows:

1) Phase I – Mobilization

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:

Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 15 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 16 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 12+85.40±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 14+09.55±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 16+29.36±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane

At STA. 17+17.51±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 17+37.10±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 18+16.42±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 18 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 19 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 21 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 22 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 26 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 27 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 28 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 29 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 30 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 30 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 31 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 33 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 34 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 35 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 37 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 38 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 39 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 41 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 42 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 43 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 44 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01200 PROJECT MEETINGS

PART 1 – GENERAL

1.0.1. PROJECT SCHEDULES

A. General: Develop and submit for approval by the City a construction progress schedule and phasing plan demonstrating complete fulfillment of all Contract requirements including all activities of Subcontractors, equipment vendors and suppliers. Unless otherwise directed by the Engineer, the construction progress schedule shall be computer developed and maintained using Microsoft Project software as manufactured by Microsoft Corporation, Primavera, or equal. The Contractor shall prepare a network plan utilizing CPM (Critical Path Method). The City reserves the right to request progress schedule on magnetic media.

B. Submittal: The progress schedule shall be plotted on 11-inch by 17-inch paper and shall be reviewed and updated monthly, depicting progress through the last day of the current month and scheduled progress through completion. Six up to date copies of the schedule shall be submitted along with the application for monthly progress payments for the same period.

1. Immediately after award of contract, submit for review the progress schedule describing the activities to be accomplished and their dependency relationships, showing starting and completion dates for each activity in terms of the number of days after receipt of Notice to Proceed. All completion dates shown shall be within the period specified for contract completion.

2. After receipt and initial review, the Engineer will meet with the Contractor for joint review, correction or adjustment of the proposed plan and schedule. Within five (5) calendar days after the joint review, the Contractor shall revise the schedule in accordance with agreements reached during the joint review and shall submit two copies of the revised schedule. After the Contractor has received both the Notice to Proceed and the approved copy of the schedule, he shall immediately add calendar dates in lieu of the number of days from the date of Notice to Proceed and shall furnish two copies of the revised schedule to the Engineer.

C. Schedule Requirements:

1. Show the sequence and interdependence of activities required for complete performance. In preparing the schedule, break up the work into activities of a duration of no longer than fifteen working days each, except as to non-construction activities (such as procurement of materials, delivery of equipment and concrete curing) and any other activities for which the Engineer may approve the showing of longer duration. The schedule shall show the activities for actual construction

work for each trade category of the project. The Contractor is to include a schedule of submittals of shop drawings, equipment schedules, coordination drawings, templates, fabrication, delivery and the like, and review and approval of shop drawings. Activities related to a specific physical area of the project shall be grouped on the schedule for ease of understanding and simplification. Activity duration (i.e. the single best estimate, considering the scope of the activity, and the resources planned for the activity) shall be shown on each activity on the diagram. To the extent that the schedule or any revised schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the City's approval of the schedule.

2. Include a cost estimate for each activity which cumulatively equals the total Contract cost. Estimated overhead and profit shall be prorated throughout all activities. The partial payments as defined under the General Conditions will be based on these approved activity costs.

3. With each request for a partial payment, submit a copy of the approved schedule marked to show the activities completed and partially completed, for which payment is requested.

4. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer In writing, no extension of Project will be allowed due to such a shutdown. If any extension of time is allowed, it will be a non-compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

5. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours affects the work of the Contractor, the Contractor’s sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

1.0.2. PROGRESS MEETINGS

A. General progress meetings will be held once each week at which every entity then involved in the planning, coordination and performance of work shall be discussed. The progress of each element of current work shall be discussed as to whether it is ahead of schedule, on time or behind time in relation to the updated progress schedule. For each meeting, the Contractor shall prepare a detailed three (3) week "look ahead" schedule in addition to, showing the progress schedule of the previous week. Methods to expedite behind-time work shall be determined, and commitments secured for bringing back to the scheduled date for the entities involved. Everything of significance which could affect the progress of the work, including schedule revisions, shall be discussed to ensure that current and subsequent work will be completed within the Contract time. Within three days after each meeting, copies of the minutes of the meeting, including a brief summary of progress of the work since the previous meeting, shall be distributed to each present or who should have been present. Whenever revisions to the progress schedule have been made or recognized at the progress meeting, a copy of the revised schedule shall accompany the minutes distributed.

B. Each computer-generated construction progress schedule and report shall include the following minimum items:

1. Activity Numbers.
2. Duration Estimate.
3. Activity Description.
4. Early Start Date (Calendar Dated).
5. Early Finish Date (Calendar Dated).
6. Latest Allowable Start Date (Calendar Dated).
7. Latest Allowable Finish Date (Calendar Dated).
8. Status (whether critical).
9. Estimated Cost of The Activity.
10. Total Float and Free Float.

C. In addition, each construction progress schedule, network analysis and report shall be prefaced with the following summary data:

1. Contract Name and Number.

2. Contractor's Name.

3. Contract Duration.

4. Contract Schedule.

5. The Effective or Starting Date of The Schedule (the date indicated in the Notice-to-Proceed).

D. The workday to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays, adverse weather and all other special requirements of the work. Normal work hours are Monday thru Friday, 7:30 am to 4:30 pm.

E. If the Contractor desires to make changes in the method of operating which affects the construction progress schedule and related items, he/she shall notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer accepts these changes, in writing, the Contractor shall revise and submit, without additional cost to the City, all of the affected portions of the construction progress schedule, and associated reports. The construction progress schedule and related items shall be adjusted by the Contractor only after prior acceptance, in writing by the Engineer. Adjustments may consist of changing portions of the activity sequence, activity durations, division of activities, or other adjustments as may be required. The addition of extraneous, non-work activities and activities which add restraints to the construction progress schedule shall not be accepted.

F. Except where earlier completions are specified, schedule dates which show completion of all work prior to the contract completion date shall, in no event, be the basis for claim for delay against the City by the Contractor.

G. Construction progress schedules and related items which contain activities showing negative float or which extend beyond the contract completion date will not be accepted by the Engineer. Whenever it becomes apparent from the current construction progress schedule and associated reports that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the Engineer, the Contractor shall take some or all of the following actions at no additional cost to the City. They shall submit to the Engineer for approval, a written statement of the steps they intend to take to remove or arrest the delay to the critical path in the current construction progress schedule.

1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.

2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.

3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.

H. If when so requested by the Engineer, the Contractor should fail to submit a written statement of the steps they intend to take or should fail to take such steps as reviewed and accepted in writing by the Engineer, the Engineer may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the current construction progress schedule, and the Contractor shall promptly provide such level of effort at no additional cost to the City.

I. If the completion of any activity, whether or not critical, falls more than 100 percent behind its previously scheduled and accepted duration, the Contractor shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.

J. Shop drawings which are not approved on the first submittal or within the time scheduled, and equipment which does not pass the specified tests and certifications shall be immediately rescheduled.

K. The contract time will be adjusted only in accordance with the General Requirement and other portions of the Contract Documents as may be applicable. If the Engineer finds that the Contractor is entitled to any extension of the contract completion date, the Engineer's determination as to the total number of days extension shall be based upon the current construction progress schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule and related items. Actual delays in activities which, according to the construction progress schedule, do not affect any contract completion date will not be the basis for a change therein.

L. From time to time it may be necessary for the contract schedule of completion time to be adjusted by the City in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. Under such conditions, the Engineer will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions, and the Contractor shall revise the construction progress schedule and related items accordingly, at no additional cost to the City.

M. Available float time may be used by the City through the City's Engineer.

N. The City controls the float time and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates the City may initiate changes that absorb float time only. City initiated changes that affect the critical path on the network diagram shall be the sole grounds for extending the completion dates. Contractor-initiated changes that encroach on the float time may be accomplished only with the City's concurrence. Such changes, however, shall give way to City-initiated changes competing for the same float time.

O. To the extent that the construction project schedule, or associated report or any revision thereof shows anything not jointly agreed upon or fails to shown anything jointly agreed upon, it shall not be deemed to have been accepted by the Engineer. Failure to include on a schedule any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the review of the schedule by the Engineer

P. Review and acceptance of the construction progress schedule, and related reports, by the Engineer is advisory only and shall not relieve the Contractor of the responsibility for accomplishing the work within the contract completion date. Omissions and errors in the construction progress schedule, and related reports shall not excuse performance less than that required by the Contract and in no way make the Engineer an insurer of the Contractor's success or liable for time or cost overruns flowing from any shortcomings in the construction progress schedule, and related reports.

Q. The Contractor shall present and discuss the proposed schedule at the preconstruction conference.

R. The construction progress schedule shall be based upon the precedence diagramming method of scheduling and shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the work and identifying all construction activities included but not limited to yard piping, all structures and treatment units and all related work specified herein to be performed under the Contract. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the work in order to complete the project within the contract time. The project critical path shall be clearly identified.

1.0.3. DAILY REPORTS

A. Prepare and submit to the Engineer at regular intervals not exceeding weekly intervals, a daily report recording information concerning events at the site. The daily reports shall contain the following and any other significant information:

1. General weather conditions, rain, high/low temperatures.

2. List of Subcontractors on site.

3. List of separate Contractors at the site, if any.
4. Meetings and significant decisions.
5. Stoppages, delays, shortages, losses.
6. Emergency procedures, field orders.
7. Orders/requests by governing authorities.
8. Other events or activities.
9. Partial completions.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01300 SUBMITTALS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, materials, reinforcing steel, fabricated items, and piping and conduit details. The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

B. The Contractor shall submit copies of all permit applications, permit submittals, permit comments and permit approvals.

C. Within 10 calendar days after Notice to Proceed, Contractor shall submit a complete list of all anticipated submittals including shop drawings, submittals, and product data with an anticipated delivery date to the Engineer and review and approval times. This shall be reviewed during the Project Kickoff Meeting and shall be continuously updated and reviewed during Project Progress Meetings.

1.0.2. CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where his submittal may affect the work of another Contractor or the Owner. The Contractor shall coordinate submittals among its Subcontractors and suppliers including those submittals complying with unit responsibility requirements.

B. Record Drawings: Refer to Section 01720 "Project Record Drawings".

C. As-Built Record Drawings: Refer to Section 01725 "As-Built Record Drawings".

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01340 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Before proceeding with the erection of the construction plan, including the setting or placing thereof, and the erection of other temporary structures, the Contractor shall furnish the Engineer with such information and plans as the City may require.

B. Shop Drawings (including Pre-Approved Product List submittals) shall be submitted prior to any project construction activity. In a timely fashion, well before the contemplated ordering for fabrication of special order or long-lead items or construction use of any standard element of the work, the Contractor shall furnish Shop Drawings for the review and approval of the City.

C. It is the Contractor's sole responsibility, upon the first occasion of submittal of a particular element of the work, to submit Shop Drawings of an element which match and fulfill the requirements and intent of the plans and specifications. Any delays or costs caused, either directly or indirectly, by non-timely submissions; submission of items differing significantly from the intent of the plans and/or specifications; repeated submission of, or argument over, rejected elements or changes required for acceptance; arguments with the criteria or requirements of the plans or specifications; or any other such similar activities shall be at the expense of the Contractor.

D. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

1.0.2. DESCRIPTION OF WORK

A. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

B. After award of the project, the Contractor may begin providing submittals for approval. Submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop

Drawings and providing materials, equipment, etc., fully in accordance with the specifications. This procedure is required in order to expedite final review of Shop Drawings.

C. Maintain an accurate updated Shop Drawing submittal log which shall include the following items:

1. Submittal Description and Number Assigned.

2. Specification Section.

3. Plans Sheet Number.

4. Date to Engineer.

5. Date Returned to Contractor (from Engineer).

6. Status of Submittal (Approved, Approved as Noted, Rejected/Resubmit).

7. Date of Resubmittal and Return (as Applicable).

8. Date Material Release (for Fabrication).

9. Projected Date of Fabrication.

10. Projected Date of Delivery to site.

11. Status of O & M Manuals Submittal.

1.0.3. CONTRACTOR'S RESPONSIBILITY

A. Furnish the Engineer with a schedule of Shop Drawings submittals, fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

B. Submit to the Engineer all plans and schedules sufficiently in advance of construction requirements to provide maximum time for checking and appropriate action from the time the Engineer receive them.

C. It is the duty of the Contractor to check and approve all plans, data and samples prepared by or for him/her before submitting them to the Engineer for review. Each and every copy of the plans and data shall bear Contractor's stamp showing that they have been checked and approved. Shop Drawings submitted to the Engineer without the Contractor's stamp and approval shall be returned to the Contractor for

conformance with this requirement before Engineer's review. ***Shop Drawings shall indicate any deviations in the submittal from requirements of the Project Documents and the Contractor shall state the reason why a deviation is required.***

D. All submittals shall be accompanied by a submittal registry and transmittal letter containing the following information:

1. Date.

2. Project Title and Number.

3. Contractor's name and address.

4. The number of each Shop Drawing, Data, and Sample submitted.

5. Notification of Deviations from Project Documents.

6. Submittal Log Number conforming to and referring to Specification Section Number.

7. Contractor signature or of its authorized representative.

E. Submit seven copies of Shop Drawings and of descriptive or product data submittals necessary to complement Shop Drawing. The Engineer will retain five sets.

F. After receiving approval by the Engineer, the Contractor shall be responsible for submitting the Shop Drawings to the City. Shop Drawings of all premanufactured items and all other Shop Drawings are required to obtain approval prior to manufacturing or installing the submitted items. The Contractor shall also be responsible for contesting any interpretations by the City that considers non-acceptable. The Contractor shall include in the bid prices, all costs for permits, fees and expenses associated with the submittals, including resubmittals (if any) of Shop Drawings to the City.

G. Do not begin any of the work covered by a drawing, data, or a sample returned as “Rejected/Resubmit” until a revision or correction thereof has been reviewed and returned to the Contractor, by the Engineer, with approval or approval “As Noted”. Be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to receiving Engineer's approval or approval “As Noted” of the necessary Shop Drawings.

H. Be fully responsible for observing the need for and for making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment the Contractor proposes to supply, both as they

pertain to the Contractor's own work, work of others, or of other Divisions herein or Trades and clearly show such changes on the Shop Drawings.

I. When substitutions in materials or equipment are allowed, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense.

J. When substitutions in materials or equipment are allowed, the Contractor shall be solely responsible for all costs and time required by any differences in construction methods, fabrication or assembly required and no additional time will be allowed.

K. Determine and verify:

1. Field measurements.

2. Field construction criteria.

3. Catalog numbers and similar data.

4. Conformance with specifications.

5. That installation and maintenance clearances are sufficient particularly when equipment or arrangement changes have been made.

1.0.4. ENGINEER'S REVIEW OF SHOP DRAWINGS

A. Engineer's review of plans, data and samples, submitted by the Contractor will cover only general conformity to the drawing and specifications. The Engineer's review will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown. The review of plans and schedules will be general, and shall not be construed:

1. As permitting any departure from the Contract requirements.

2. As relieving the Contractor of responsibility for any errors, including detail, dimensions, and materials.

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

B. Variations:

1. If the plans or schedules, as submitted, describe variations per paragraph 1.03 C, and show a departure from the Contract requirements which Engineer finds to be in the interest of the City and to be so minor as not to involve a change in Contract price or time for performance, the Engineer may return the reviewed plans without noting an exception.

2. If the plans or schedules, as submitted, describe variations and show a departure from the Contract requirements which the Engineer finds to be minor enough to be corrected by redlining the submittal, the Engineer will mark and return the submittal marked "Approved as Noted." The redlined corrections shall be as binding on the Contractor as would be a resubmission embodying the same corrections.

C. When reviewed by the Engineer, each of the Shop Drawings shall be stamped and dated to indicate it had been reviewed. Shop Drawings stamped "Revise and Resubmit" and with required corrections shown will be returned to the Contractor for correction and resubmittal.

D. If the Contractor considers any correction indicated on the Shop Drawings to constitute a change to the project plans or specifications, the Contractor shall give written notice thereof to the Engineer who will render a decision which shall be final. After the decision has been made, the Contractor shall without delay, provide the corrections to the plans.

E. When the Shop Drawings have been approved by the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

F. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for resubmittal.

1.0.5. SHOP DRAWINGS

A. Shop drawings shall be of such character that they may be used as fabrication drawings. Prior to submission, the Contractor shall thoroughly check such drawings, satisfying himself that they meet the requirements of the Plans and Specifications and that they are coordinated with the arrangements set forth on other shop drawings, and shall place on them the Project Number, the date and his signature and stamp of approval. Where items for which shop drawings are submitted are to meet special conditions listed in the detailed Specifications, the conditions shall be so noted on the drawing. Where there is a deviation from the Specifications, the Contractor shall note it and state the reason why a deviation is required. Two copies will be returned to the Contractor with the Engineer's mark of approval thereon, or will be marked to indicate changes necessary to effect compliance with the Specifications and the remaining copies will be retained by the City. When shop drawings are approved by the Engineer, they shall be as binding as any of the Contract Documents. Any errors or omissions on the shop drawings shall not relieve the Contractor of his responsibility.

He shall correct such errors, or omissions, including any necessary additions or alterations to construction, at his expense upon notification by the Engineer.

B. Shop drawings submitted without the required approval as specified above shall be returned without review and no extension of time will be granted for any delays caused by such improper submission.

C. The approval of shop drawings and data will be general, and shall mean that upon examination of the shop drawings, no variations from the Contract requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined under the Contract.

D. When used in the Project Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the project. These Shop Drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance/test data shall be considered only as supportive to required Shop Drawings as defined above.

E. Manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Information which is not applicable to the work shall be deleted by striking or cross hatching.

F. If plans show variations from Contract requirements because of standard shop practice or for other reasons, describe such variations in the letter of transmittal. If no explanation of these variations is provided, the Contractor shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such plans have been reviewed and approved.

G. For all mechanical and electrical equipment furnished, provide a list including the equipment name, address of and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

H. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required Shop Drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five years, unless otherwise specified. Manufacturers and/or equipment which fails to meet the specified experience period will be considered if the manufacturer or supplier provides a bond or cash deposit which will guarantee replacement of the equipment or process in the event of failure or unsatisfactory service.

I. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.

1.0.6. REQUIRED INFORMATION

A. Submit, as applicable, the following for all prefabricated or manufactured structural, mechanical, electrical, plumbing, process system, and equipment work:

1. Shop Drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.

2. Catalog information and cuts.

3. Installation or placing plans for equipment, drives, and bases.

4. Supporting calculations, signed and sealed by a Florida Registered Engineer when required, for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers.

5. Signed and sealed calculations and plans by in-house Florida Registered Professional Engineer for structural systems, indicating compliance to the structural design criteria specified in the plans.

6. Complete manufacturer's specifications, including materials description and paint system.

7. Performance data and pump curves.

8. Suggested spare parts with current price information.

9. List of special tools required for testing, checking, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and are not customarily and routinely carried by maintenance mechanics)

10. List of special tools furnished with the equipment

11. List of materials and supplies required for the equipment prior to, and during startup

12. List of materials or supplies furnished with the equipment

13. Special handling instructions

14. Requirements for storage and protection prior to installation

15. Requirements for routine maintenance required prior to equipment startup

16. List of all requested exceptions to the Project Documents

1.0.7. SUBMITTAL REQUIRED FOR FOREIGN MANUFACTURED ITEMS

A. In addition to the submittal requirements stated above, suppliers of foreign manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the work. Failure to prove these capabilities shall be cause for rejection of the foreign manufactured items.

B. Foreign manufactured equipment and materials shall in all cases be clearly and permanently marked with the manufacturer's name and country of origin of the item. The name of the U.S. importing/supplying firm is not acceptable. Shop Drawing submittals of foreign-made items shall be accompanied by written information to include name and location (i.e. country, City, and street address) of the manufacturer. This requirement shall also apply to the foreign made elements of items assembled in this country from parts wholly or partially manufactured overseas.

1. The words, "Permanently Marked" as used in this paragraph shall mean; die stamped, cast-in, welded, or otherwise marked such that the removal of the marking by any mechanical or chemical means will result in obvious permanent damage to the surface marked. These markings shall be on surfaces which are not hidden by assembly.

C. Where specified elsewhere herein or at the sole discretion of the Engineer, whose word shall be final, supply verification of quality, suitability or other aspects, as directed by the Engineer, from a Professional Engineer licensed to practice in the State of Florida or the state where the supplying U.S. firm is located. The verification shall be signed, sealed, and dated. All costs for this verification shall be at the sole expense of the Contractor and no extra compensation will be allowed. Verification by foreign-based engineers, firms, manufacturers, etc. will not be acceptable.

1.0.8. SAMPLES

A. Furnish for the approval of the Engineer, samples required by the Project Documents or required by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture and pattern.

3. A minimum of two samples of each Item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of Project.

2. Material or Equipment Represented.

3. Name of Producer and Brand (if any) Location in Project.

D. Prepare a transmittal letter in triplicate for each shipment of samples containing the information specified herein in Paragraph 1.05 A. Enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use specified and shall not be construed to change or modify any Contract requirements.

E. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples.

1.0.9. SUSTITUTION

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents, which are proposed by the Contractor after award of the Contract, are considered to be requests for substitutions. Where the plans and/or specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use. Articles or products of similar characteristics may be offered for the approval of the Engineer, whose decision shall be final. Copies of complete descriptive data shall be furnished regarding all materials furnished by the Contractor, consisting of Dimension drawings, catalog references, product data, cost, and other information necessary to clearly identify and evaluate each article.

B. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent, connected, or other structures and equipment at his expense. the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall

be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. Where there is a deviation from the Specifications, the Contractor shall note it and state the reasons why a deviation is required.

D. Where engineer-recommended changes, substitutions or appurtenant work require engineering design, the Contractor shall have such design services performed. Those engineering design services shall be of an extent satisfactory to the Engineer, whose decision shall be final.

E. The approval of Pre-Approved product sheets, shop drawings and data will be general and shall mean that upon examination of the drawings, no variations from the approved project drawings and project requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined above. The City's review will not constitute an approval of dimensions, quantities and details of the material, equipment or item shown.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01380 CONSTRUCTION PHOTOGRAPHS AND VIDEO PHOTOGRAPHY

PART 1 – GENERAL

1.0.1 DESCRIPTION OF WORK

A. This section specifies the taking and submission of construction photographs and audio-video photography.

B. Prior to the delivery of any equipment, materials or supplies to the site of any work, or to the beginning of any of the construction work, the Contractor shall provide pre-construction photography as specified herein for the purpose of establishing the surface conditions existing in all of the areas to be affected by the construction of the Project.

C. Pre-Construction Photographs: The Contractor shall video/photograph the entire project site during normal working hours including all concrete and asphalt pavements, curb and gutter, fencing, landscaping to remain, structures to be demolished, and existing structures that are to be modified. All videos and photographs shall be date and time stamped and a digital copy submitted on a flash drive/memory stick or media acceptable to the Department prior to beginning construction activities. The video/photographs shall clearly identify existing site and structural conditions.

D. Ground photography shall consist of photographs and color video taping of surface features taken along the entire length of the Project and including all work, intersecting roadways and properties that will be impacted by the water service conversions.

E. The purpose of the color audio-video taping of the project is to provide the necessary information for restoration of surface features after completion of the Project. The Contractor shall be responsible for repairing any damage or defect not documented as existing prior to construction.

1.0.2 QUALITY ASSURANCE

A. Photographs shall be clean, sharp and clearly show details. Out-of-focus photographs will not be acceptable.

B. Digital photographs which are poorly lit or lack definition will not be acceptable

1.0.3 SUBMITTALS

A. Submit one (1) final digital file of each construction photograph and one (1) flash drive/memory stick or acceptable media with the video as follows:

1. Within fourteen (14) days of receiving Notice to Proceed

2. Number photographs in sequence beginning with the numeral one

PART 2 – PRODUCTS

2.0.1 SIZE AND QUALITY

A. Digital pictures and videos shall be compatible with City's software, color, 3½-inches by 5-inches.

B. Digital pictures and videos shall be compatible with City's software.

2.0.2 IDENTIFICATION

A. Each photograph shall be stamped with the following information stamped or typed on the back of the print:

CITY OF OPA-LOCKA WORKS DEPARTMENT
Contract No. _____
CONTRACTOR: _____
Photograph No. _____ Date: _____ Time: _____
Description: _____
_____
_____

2.0.3 QUANTITY

A. A minimum of twelve (12) photographs shall be taken prior to construction and twelve more each month until completion of the Work.

B. In the instance of a pipeline installation, take a minimum of one photograph each 200 feet or fraction thereof along the entire route of the main initially. During construction a minimum of one photograph every two hundred feet or fraction thereof of that portion of the main constructed during the month until completion.

C. The number of photographs required shall be at the sole discretion of the Engineer whose decision shall be final.

D. An increase in the number of photographs above the minimums shall not be cause for an increase in cost and no extra compensation will be allowed.

2.0.4 VIDEO PHOTOGRAPHY

A. Color audio-video shall be submitted on a flash drive/memory stick or acceptable media.

PART 3 – EXECUTION

3.0.1 INITIAL AND CONSTRUCTION PHOTOGRAPHY

A. Take pre-construction photographs of the entire site or route of the main after receiving the Notice to Proceed and prior to disturbing the site in any manner. Coordinate with the Engineer as to the vantage points and number of photographs required in Paragraph 2.0.3.

B. Photography During Construction: Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

C. Photographic equipment utilized shall be of sufficient quality to produce pictures capable of being enlarged without loss of definition or sharpness.

3.0.2 PHOTOGRAPHY DURING CONSTRUCTION

a. Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

3.0.3 VIDEO PHOTOGRAPHY

A. Coverage of Taping: Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, streets, signs, landscaping, trees, catch basins, fences, visible utilities and all buildings located within the work zone of the Project. Of particular concern are any existing faults, fractures, defects or other features. Audio description shall be made simultaneously with and support the video coverage.

B. Streets: shall be recorded by audio-video tape for the full width of the right-of-way, except where specifically noted otherwise by the Engineer.

C. Front, Side and Rear Yard Areas: shall be recorded by audio-video tape of properties impacted by the water service conversions.

3.0.4 LOCATION INFORMATION

A. All flash drives/memory sticks or other acceptable media shall be properly identified by number, location and project name in a manner acceptable to the Engineer.

B. A record of the contents of each flash drive/memory stick or acceptable media shall be supplied on a run sheet identifying each segment in the tape by location, i.e., street

viewing side, traveling direction, engineering stationing, and all referenced by tape counter numbers.

C. All video recordings shall begin with the date and time of recording, the project name, the sheet numbers of engineering stationing as shown on the plans, the name of the street, area or building being taped, the direction of travel and the viewing side. Houses and buildings shall be identified visually by house or building address, when possible, in such manner that the progress of the taping and the proposed system may be located by reference to the houses and buildings.

3.0.5 SITE RECORDING CONDITIONS

A. All audio-video taping shall be done during times of good visibility. No outside taping shall be done during periods of visible precipitation or when the ground area is covered with leaves or debris, unless otherwise authorized by the Engineer.

B. In order to produce the proper detail and perspective, adequate auxiliary lighting will be required to fill in shadow areas caused by trees, utility poles, road signs and other such objects, as well as other conditions requiring artificial illumination.

C. The average rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 60 feet per minute. Planning rates and zoom-out rates shall be controlled sufficiently so that playback will produce adequate clarity of the object being viewed.

END OF SECTION

01400 QUALITY CONTROL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The intent of this section is to emphasize the City interest in quality products being designed and installed within the time and cost considerations of the project. The Contractor shall have primary responsibility for providing Quality Control (QC) for project during both design and construction phases. Quality Control includes, but is not limited to, such functions as:

1. Assuring only latest revisions of design and other documents used for construction (e.g., Shop Drawings, catalog cuts, schedules) are being used by project staff.

2. Inspection of materials and equipment delivered to the site.

3. Inspection and maintenance of materials and equipment in storage.

4. In progress and Final Inspection of the constructed product.

5. Manufacturer's Certification of Installation for service intended.

6. Reporting on work in progress daily.

B. The Contractor shall have a QC System and sufficient QC staff, in place in the design team office and on the jobsite always that work is underway.

C. The Contractor is responsible for controlling the quality of the work, including that portion of the work performed by Engineer of Record, the Cogeneration system manufacturer and on-site Subcontractors. The Contractor is also responsible for assuring that suppliers and manufacturers providing materials and products to be incorporated into the work satisfy the specified quality, provide required documentation, and provide those services as specified within the technical portions of the specifications.

D. The Contractor shall develop and submit a Quality Control Plan which identifies the reporting structure of the QC organization, defines the procedures to be implemented by the Contractor to assure the specified quality is achieved, and details the daily reporting protocol. Within 20 calendar days of the Notice to Proceed (NTP), the Contractor shall submit their proposed Quality Control Plan. The Engineer will schedule a review meeting of the outline within one week of receipt of the plan outline. Final submission of the quality control plan shall be made no later than 10 calendar days following the review meeting.

E. The Contractor and Engineer will coordinate materials testing for cast-in-place concrete, earthwork, and paving.

1.0.2. MATERIALS AND EQUIPMENT

A. The Contractor shall maintain control over procurement sources to ensure that materials and equipment conform to specified requirements.

B. The Contractor shall comply with manufacturer's instructions regarding all facets of materials and/or equipment movement, storage, installation, testing, startup, and operation.

C. The Contractor shall prepare, complete, and maintain all equipment, pipe, and testing logs that document the dates and disposition of each specific test conducted. The logs will be comprised of a summary sheet that is corroborated by individual test report forms that document the specific tests. The individual test report form will be provided by the Engineer.

1.0.3. MANUFACTURER'S TECHNICAL REPRESENTATIVE

A. When specified in the technical specification sections, the Contractor shall arrange for and provide technical representation directly from the manufacturers of respective equipment items or components.

B. If, in the opinion of the Engineer, the Manufacturer's Representative fails to satisfy the terms of this Specification section, the Engineer may direct the Contractor to replace the Representative with a different representative, and those hours expended by the disapproved representative will not be counted against the service hours specified for the system/unit/component.

PART 2 – PRODUCTS

2.0.1. QUALITY CONTROL PLAN

A. The Quality Control Plan shall be a formal document prepared under the direction of the Contractor. The Plan will be the basis by which the Engineer will monitor the QC effort associated with executing the work.

B. The Plan shall address the Quality Control Organization and the roles each member of the organization plays in satisfying the quality requirements of the work.

C. Included within the plan will be basic guidelines associated with the checking and monitoring of work as it progresses and how the guidelines will be used by Contractor's supervisors and representatives to provide the required quality.

D. The process for notification of quality concerns shall be included in the Plan.

2.0.2. REPORTS

A. Monthly Quality Control Summary that addresses the following:

1. Certification by Contractor that all work not specifically cited by a Non-Conformance Report satisfies the requirements of the Contract Documents.

2. Summary table identifying all non-conformance notices and their respective current status.

B. Certificate of Proper Installation shall address installation of equipment items.

PART 3 – EXECUTION

3.0.1. QUALITY CONTROL

A. Quality control is the responsibility of the Contractor, and the Contractor shall maintain control over construction and installation processes to assure compliance with specified requirements.

B. Means and methods of construction and installation processes are the responsibility of the Contractor, and at no time is it the intent of the Engineer to supersede or void that responsibility. In the event there is a degree of uncertainty that the process observed or planned will accomplish the required quality, the Engineer will refer to the Quality Control Plan and initiate discussion with the person primarily responsible for the process or installation in question.

C. Prepare and submit weekly Quality Control activity reports to the Engineer.

D. Monthly Quality Control Summaries are to be prepared and submitted to the Engineer with the Contractor's Partial Payment request for the respective period.

END OF SECTION

01510 TEMPORARY UTILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide temporary facilities required, which may include, but not limited to, the following:

1. Contractor's field office, telephone and storage sheds.

2. Temporary water service.

3. Temporary sanitary service.

4. Temporary electrical service.

B. For additional requirements on Temporary Facilities refer to Section 01100 “Special Project Requirements”.

C. Requirements of Regulatory Agencies:

1. Obtain and pay for permits as required by governing authorities.

2. Comply with federal, state and local codes and regulations.

1.0.2. TEMPORARY ELECTRICITY

A. The City will not furnish electric power for this project. All electrical driven equipment, including electrical welders, shall be served by the temporary electrical service to be provided by the Contractor.

B. The Contractor shall supply extension cords, ground fault circuit interrupters, and safety equipment necessary to protect his workmen and plant personnel.

C. The Contractor shall obtain a power source for temporary electricity from electrical generators or other approved means. Furnish, install and maintain temporary electric power service for construction needs throughout construction site as necessary.

1. Power centers for miscellaneous tools and equipment used in construction work.

2. Power for construction equipment.

3. Power for testing and checking equipment.

4. Power for welding units and for other equipment having special power requirements.

D. Capacity:

1. Adequate electrical service distribution for construction use by all trades and Field Offices during construction period.

2. Notify FPL if unusually heavy loads, such as welding, pumps, high service temporary pump, and other special power requirements, will be connected.

E. Maintain strict supervision of use of temporary services.

1. Enforce conformance with applicable standards.

2. Enforce safe practices.

3. Prevent abuse of services.

1.0.3. TEMPORARY SANITARY FACILITIES

A. Furnish, install and maintain temporary sanitary facilities for use throughout construction period.

1. Enclosed toilet facilities for construction personnel.

2. General employee washing facilities.

B. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of Contractor's employees. Toilets at construction sites shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.

C. Minimum number of fixtures:

1. Toilets and Urinals:

For less than 20 employees: 1 toilet.
For 20 or more employees: 1 toilet and 1 urinal per 40 workers.

2. Washing Facilities: Adequate for number of employees, for type of work requiring washing facilities.

D. Maintain strict supervision of use of facilities:

1. Enforce conformance with applicable standards.

2. Maintain service and clean facilities.

3. Enforce proper use of sanitary facilities.

E. Cost of Installation and Operation:

1. Pay costs of temporary sanitary facilities, including costs of installation, maintenance and removal.

2. Costs of Water: As specified in Temporary Water.

3. Pay service charges for use of portable units.

F. Facility Locations:

1. Within the project site.

2. At Field Offices

3. Toilet and washing facilities:

Secluded from public observation.
Convenient for use of personnel in relation to work stations.

4. Obtain acceptance of the Engineer for all locations.

G. Enclosure for Toilet Facilities:

1. Weatherproof, sight proof, sturdy temporary enclosures.

2. Insect proof screening, adequate natural ventilation.

H. Sewer Connection: The Contractor shall coordinate with the City's Public Works Department for obtaining sewer connection and shall pay permit and sewer usage charges.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. General: Materials may be new or used, but must be adequate for purpose required, must be sanitary and must not violate requirements of applicable codes. Materials in contact with potable water must be AWWA/NSF 61 listed.

2.0.2. ELECTRICITY

A. Provide required facilities, including transformers, conductors, poles, conduits, raceways, breakers, fuses and switches.

B. Provide appropriate enclosures for environment in which used, in compliance with NEMA standards.

2.0.3. DRINKING WATER FACILITIES

A. Portable Containers

1. Tightly closed and equipped with dispensing tap.

2. Clearly label contents.

3. Do not use for other purposes.

4. Provide single service disposable cups, with sanitary container for unused cups, and receptacles for used cups.

2.0.4. SANITARY FACILITIES

A. Toilet Facilities:

1. Portable toilets; either:

a. Chemical toilets.

b. Reticulating toilets.

c. Combustion toilets.

2. Toilet Tissue: Provide at each toilet, on suitable dispenser.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Obtain Engineer's approval of planned installations.

B. Install work in a neat and orderly manner.

C. Make structurally sound throughout.

D. Maintain to provide continuous service.

E. Modify and extend service as work progress requires.

3.0.2. TEMPORARY WATER

A. Locate piping and outlets.

1. Provide service convenient to work stations.

B. Avoid interference with:

1. Traffic and work areas.

2. Materials handling equipment.

3. Storage areas.

C. Do not run piping on floor or on ground.

D. When necessary to maintain pressure, provide temporary pumps, tanks and compressors.

3.0.3. TEMPORARY ELECTRICITY

A. Service and distribution may be overhead or underground.

B. Locate to avoid interference with:

1. Traffic and work areas.

2. Cranes.

3. Material handling equipment.

4. Storage areas.

C. Do not run branch circuits on floor or on ground.

D. Wire all safety devices required for operation of equipment.

E. Check operation of safety devices.

3.0.4. TEMPORARY SANITARY FACILITIES

A. Portable Toilets:

1. Erect securely and anchor to prevent dislocation.

2. Service as often as necessary to prevent accumulation of wastes and creation of unsanitary conditions.

B. Washing Facilities: Provide faucet

3.0.5. REMOVAL

A. Completely remove temporary materials and equipment upon completion of construction.

B. Clean and repair damage caused by installation and restore to specified or original condition.

END OF SECTION

01530 PROTECTION OF EXISTING FACILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall exercise extreme care and protect all existing structures and utilities, when working in proximity so as not to disturb the structures. Repair or replacement of any property and/or structures damaged during the construction of this project shall be the sole responsibility of the Contractor. Costs involved in the replacement or repair will not be reimbursed by the City. The Contractor shall be responsible for coordinating his work with the work to be done by FPL or their Contractor.

B. Protection of Property Remaining in Place:
   1. Property obstructions which are to remain in place, such as buildings, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced. Any damage to such obstructions noted to remain in place shall be repaired by the Contractor at no additional cost to the City or Owner.
   2. Should structures be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

C. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

1.0.2. GENERAL CONSIDERATIONS

A. All cost for changing the grade of the proposed main downward two feet-six inches or less in order to clear obstructions located differently than shown on the plans, or to clear obstructions not shown on the plans but the location of which could have become known or should have become known by proper observation of field conditions or the proper exploratory procedure, shall be included in the prices bid under the various items of the Proposal and no additional compensation will be allowed.

B. Additional cost, if any, for changing the grade of the proposed main downward more than two feet-six inches, for the same reasons, will be paid for as "Extra Work" in accordance with "Extra Work and Payment Therefore" of the Special Conditions.

C. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

D. Where the Quotation contains Items for installing main in specific depth ranges, the main shall be paid for at the actual depth range installed. However, the provisions of paragraphs one and two of this Section shall apply and any depth increase caused by a lack of timely and sufficient exploration by the Contractor shall be at his expense. In such instance, the main shall be paid for as if installed at the invert elevations originally shown on the Plans.

E. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving, air release valve assemblies, and similar items for which a pay item was established in the Proposal, then such additional work and items will be paid for at the prices bid.

F. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

G. Where it is necessary to temporarily interrupt house or building services, the Contractor shall notify the house or building owner or occupant, both before the interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the Contractor shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Contractor shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved.

H. Various drainage culverts and drainage ditches may be encountered along the route of the work. Any culverts which are disturbed, damaged or removed shall be repaired, restored or reinstalled. The Contractor shall document any existing damage to the drainage systems, or if it needs cleaning, prior to doing any work in the vicinity, so he will not be held responsible. Drainage ditches shall be restored to the original cross sections existing prior to construction of this work. Ditches shall be left clean and free of all excavated materials or other materials deposited in them as a result of this construction. All existing headwalls, removed or damaged as a result of this construction, shall be restored as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the other items of the quotation.

I. All existing drainage structures and piping shall be considered clean at the start of construction. The Contractor shall check to verify that this is so. The Contractor

should notify the governing agency of any damaged or dirty structures or piping to avoid repair or cleaning at his expense. Copies of such notices shall be sent to the Engineer.

1.0.3. RELOCATION OF EXISTING UTILITIES

A. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

B. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer. There shall be no additional payment for adjustments in grades or location resulting from locations of existing utilities.

D. Various storm sewer lines and inlets and slab-covered drainage ditches that conflict with the proposed construction may require adjustment, relocation or removal and reinstallation. This work shall be performed as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the items listed in the quotation.

E. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the Specifications and the permitting documents.

F. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose and provide temporary support for all existing underground utilities and utility poles where necessary.

G. Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines, whether shown on the Plans or not. The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

1.0.4. PROTECTION OF UTILITIES TO REMAIN IN PLACE

A. The work area may have existing utilities, such as, but not limited to irrigation, phone, electrical, water, sewer, storm sewer, and gas lines. It shall be the responsibility of the Contractor to verify the location of all such utilities, structures, etc. by hand excavation or other appropriate measures before performing any work that could result in damage or injury to persons, utilities, structures, or property. The Contractor shall make a thorough search of the site for utilities before work is commenced in any particular location. The Contractor shall take special consideration to protect the existing water main, force main and power line along the project location to avoid service disruptions.

B. During construction, the Contractor shall protect the existing and proposed water main and force main using steel plates, as indicated in the drawings, until site work is completed and final grade is achieved. The Contractor shall be responsible for the repair of any damages caused to these pipes during construction at no additional costs to the City.

C. The Contractor shall take immediate steps to repair, replace, or restore all services to any utilities or other facilities which are disrupted at the fault of the Contractor. Further, the Contractor shall engage any additional outside repairs on a continuous “around the clock” basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in the repairs and restoring of disrupted service resulting from negligence on the part of the Contractor shall be borne by the Contractor and shall be fully responsible for any and all claims resulting from the damage.

D. Should utilities be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

E. Prior to the start of construction, the contractor shall comply with F.S. 553.851 for the protection of underground gas lines.

F. When power poles are adjacent to any proposed utility, the Contractor shall provide proper shoring or other suitable support during construction. The shoring and support methods shall be approved by the utility company engineering department. The cost of shoring will be included in the overall project cost.

G. The Contractor shall not purposefully disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the City. Requests for disconnection must be in writing and received by the City at least 72 hours prior to the time of the requested interruption.

1.0.5. PROTECTION OF TREES REMAINING IN PLACE

A. Construction can potentially damage the existing trees confined within the construction zone. Besides their aesthetic value, some trees are valuable and may be environmentally protected. Mangroves and mangrove associated species (as defined by Miami-Dade County Code of Ordinances) are the jurisdiction of Miami-Dade County and would fall under the Miami-Dade County Code of Ordinances, Chapter 24, Division II.

B. Trees can be an important part of the ecological environment of the surrounding area. Measures should be in place to protect trees whenever necessary, including conservation of the canopy.

C. Where directed by the City, desirable trees within the roadway area shall be trimmed, protected, and left standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give clear height of 14 feet over vehicular areas and 8 feet over pedestrian areas.

D. When pruning cuts or root pruning to existing trees is shown in the Plans, work is to be supervised on site by an International Society of Arboriculture (ISA) or American Society of Consulting Arborists (ASCA) Certified Arborist and performed in accordance with American National Standards Institute (ANSI).

E. All trees found within a FDOT designated road shall comply with the appropriate FDOT index for tree protection barriers. All other tree protection shall be in accordance with the

F. For all areas both inside and outside the earthwork area, the Contractor shall not deface, injury, or destroy trees, nor remove or cut them without prior approval via a tree removal permit from the City of Opa-Locka Any accidental damage to a tree shall immediately be reported to the City of Opa-Locka for evaluation for public safety and possible new and additional permit requirements/work. An after-the-fact tree removal permit may be required.

G. The Contractor shall understand all ANSI tree care standards prior to the start of earthwork. All necessary permitted above and below ground tree work shall follow the appropriate ANSI standards for tree care.

H. Tree relocation, when required, shall be in accordance with CITY CODE

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01540 DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND EQUIPMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish all material, labor, tools, equipment, plant, appliances and services necessary to complete all demolition, modification and relocation work required in the drawings and specified herein. Examine the various drawings, visit the site and determine the extent of work affected therein and all conditions under which he is required to perform the various operations.

B. The Work specifically covered under this Section consists of the removal and disposal of existing structure, appurtenances, concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter. The items to be removed shall be: (1) those items shown in the Plans to be removed; (2) those found within the limits of the area to be cleared and grubbed and directed by the City or designee to be removed; (3) those items which it is necessary to remove in order to construct new structures, utilities, and other appurtenances or obstructions which may be designated in the plans.

C. Demolition shall be constructed in such a way as to leave no obstructions to any proposed new structures or to any waterways. Pilings shall be pulled or shall be cut off or broken off at least 2 feet below the finish grade line. (In the event that the Plans indicate channel excavation to be done by others, the finish ground line shall be considered as the limits of such excavation.) For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed. Retaining walls and drainage structures are specifically not included in the Work covered under this Section.

1.0.2. GENERAL CONSIDERATIONS

A. Demolition, modification, removal and relocation work shall be coordinated with the City, shall be performed in an agreed upon sequence to minimize down time at the site.

B. Promptly remove all demolished materials and debris from the site. No demolished materials shall be kept at the plant site for more than 24 hours.

C. Demolition shall result in the complete removal and disposal of existing structures and appurtenances from the site as indicated on drawings and the cleanup after completion of the demolition work.

D. The cutting and removal of existing work necessary for modifications and installation of new work shall be made with a minimum of damage to the work that is to remain. Any damage done to existing facilities which are to remain shall be repaired at the Contractor's expense to the satisfaction of the City.

E. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.

F. Non-shrink grout shall be used for setting wall casting, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as required.

G. Follow other specific instructions for the modification work given in other sections of these specifications and/or as shown on the drawings.

H. Verify exact location, material, alignment, joint, etc. of existing piping and structure prior to making the modifications and connections called out in the drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.

I. Dismantle and remove all existing equipment, piping and other appurtenances required for the completion of the work. Where called for or required, cut existing pipeline for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removal shall be cut off one inch below the concrete surface. Surface shall be properly repaired and finished.

J. Where necessary or required for the purpose of making connections, cut existing pipelines in a manner to provide an approved joint. Where required, weld beads, flanges or provide the specified couplings, all as required.

K. Site shall be left in a clean condition satisfactory to the Engineer, free from demolished materials, rubbish or debris. Site shall be graded to meet adjacent contours and provide flow for surface drainage.

L. Restore items intended to remain that have been damaged by demolition work.

M. Items intended to remain that have been damaged by demolition work shall be restored to original or better condition.

N. All interrupted utility services shall be returned to service, and temporary services disconnected, unless otherwise specified.

PART 2 – PRODUCTS

2.0.1. STRUCTURES TO BE REMOVED

A. The work specifically covered under this Section consists of the removal and disposal of the material from existing structures.

B. The structures to be removed shall be:

1. Those structures, or portions of structures, shown in the plans to be removed.

2. Those found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed.

3. Those structures, or portions of structures, which it is necessary to remove in order to construct new structures, utilities and other appurtenances or obstructions which may be designated in the plans.

PART 3 – EXECUTION

3.0.1. METHOD OF REMOVAL

A. The structures shall be removed in such a way as to leave no obstructions to any proposed new structures or to any waterways.

B. For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed.

3.0.2. REMOVAL OF EXISTING PAVEMENT

A. The work specified in this Section consists of removing and disposing of existing concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter, where shown in the plans or directed by the Engineer to be removed or where required to be removed because of the construction operations.

B. Retaining walls and drainage structures are specifically not included in the work covered under this Division.

END OF SECTION

1-140

01550 SITE ACCESS AND STORAGE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Gravity Main Relocation work is to be performed along NW 133rd Street, between NW 42nd Avenue and NW 43rd Avenue, Opa-Locka, Florida 33054. The project's owner is the City of Opa-Locka.

1.0.2. EXISTING UTILITIES

A. Protection of, and relocation of existing utilities, structures and other facilities shall be in accordance with Specification *"01530 - Protection of Existing Facilities".*

B. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor, shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.3. SITE ACCESS AND STORAGE

A. The City reserves the right to enter upon, and to use, any and all portions of the work performed hereunder (or under its other Contracts), whether completed or not, as may be required.

B. Highway Limitations: The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the work. It shall be the Contractor's responsibility to construct and maintain any haul roads required for its construction operations.

C. Temporary Crossings: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, parking lots, Vehicular access to

all production facilities shall be maintained except when necessary construction precludes such access for reasonable periods of time.

D. Street Use: Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alleyway, or parking area during the performance of the work hereunder and it shall conduct its operations to not interfere unnecessarily with the City or any other authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed plant operations without first obtaining permission of the Engineer and the City. Where excavation is being performed in any streets, one lane shall always be kept open to traffic, unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the Engineer or the City. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment. Temporary provisions shall be made by the Contractor to assure the use of sidewalks and the proper functioning of gutters, storm drain inlets, and other drainage facilities.

E. Additional Facilities: Access to other facilities within the project site shall be allowed by the Contractor for City's staff conduct their operation and maintenance activities. Continuous, unobstructed, safe and adequate pedestrian and vehicular for the City's staff to access facilities within the project site such as the electrical building, emergency generator, water tanks and Pump Station 23 is required.

1.0.4. CONTRACTOR WORK AND STORAGE AREA

A. The Contractor may utilize private warehouse and/or office space as a storage area and/or construction field offices.

B. The Contractor shall submit to the Engineer for approval, a proposed plan and layout for all field offices, temporary facilities, and parking both for on the project site and on any additional lands obtained by the Contractor for its use during construction of the project. Prior to commencing any preparation remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, sprinkler systems, sod and all other existing installations. All these installations shall be restored to their initial conditions.

C. The Contractor shall construct and use a separate storage area for hazardous materials used in constructing the work.

1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are products labeled with any of the following terms: Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, 2 part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.

2. Hazardous materials shall be stored in groupings according to the Material Safety Data Sheets.

3. Contractor shall develop and submit to the Engineer a plan for storing and disposing of the materials above.

4. Contractor shall obtain and submit to the Engineer a single EPA number for wastes generated at the site.

5. The separate storage area shall meet the requirements of authorities having jurisdiction over the storage of hazardous materials.

6. Hazardous materials that are delivered in containers shall be stored in the original containers until use. Hazardous materials delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.0.5. PARKING

A. The Contractor shall be responsible for making its own arrangements for parking of its direct employees, Subcontractors, vendors, etc. as may be necessary either on site or offsite.

B. Traffic and parking areas shall be maintained in good conditions, free of excavated material, construction equipment, mud, and construction materials. The Contractor shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01560 TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP, Miami-Dade County Regulatory and the City's Environment and Sustainability Department.

B. All work defined by this Division, including work less than one (1) acre in size, that has the potential to impact the City's Municipal Separate Storm Water System (MS4), and/or adjacent properties, is required to employ sediment and erosion control measures that are in accordance with Florida Storm Water Erosion and Sedimentation Control Inspector's Manual, latest revision, and in accordance with Miami-Dade County Department of Environmental Resources Management.

C. All construction activity that results in the disturbance of equal to or greater than one (1) acre is required to obtain coverage under the Florida Department of Environmental Protection's Generic Permit for Storm Water Discharge from Large and Small Construction Activities (CGP).

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either Subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both, the City and other authorities with jurisdiction.

1.0.3. DUST ABATEMENT

A. All permittees, contractors, owners, operators, or other persons involved in construction activities shall refer to applicable sections of Local, State, and Federal regulations on dust control for additional guidance, including but not limited to the Miami-Dade County Code of Ordinances.

B. All persons involved in construction activities shall take measures to control dust from operations and prevent spillage of excavated materials on public roads.

C. All persons involved in construction activities shall remove spillage of excavated materials, debris, and dust from public roads by methods approved by the City or designee.

D. All persons involved in construction activities shall provide temporary dust-proof partitions where required to protect unaltered portions of existing structures and facilities and as directed by the City or designee. Temporary partitions shall be provided where demolition work is required to protect equipment and material and shall consist of plastic sheeting (6 mil).

E. All persons involved in construction activities shall apply water at locations, quantities, and frequencies required by the City or designee to control dust for nuisance prevention to the City and properties in the vicinity of the site. The frequency of watering will be determined by weather conditions and the erodibility of the soil. If additives in the water are used to increase its dust suppression properties, the chemical should have no adverse environmental impact on adjacent water bodies.

F. The Contractor shall prevent its operation from producing dust in amounts damaging to property or causing a nuisance to persons occupying buildings in the vicinity of the project Site. The Contractor shall employ measures to prevent fugitive dust. The Contractor shall be responsible for any damage resulting from dust originating from its operations.

G. Storage Piles: Enclose, cover, water (as needed), or apply non-toxic soil binders according to manufacturer's specifications on material piles (i.e. gravel, sand, dirt) with a silt content of 5 percent or greater.

H. Active Areas of Site: Water active construction areas and unpaved roads as needed and as requested by Engineer to prevent the propagation of dust.

I. Inactive Areas of Site: Apply non-toxic soil stabilizers according to manufacturer's specifications to inactive construction areas, or water as needed to maintain adequate dust control.

J. Vehicle Loads: Cover or maintain at least 2-feet of freeboard vertical distance between the top of the load and the top of the trailer sides on trucks hauling dirt, sand, soil, or other loose materials off of the site.

K. Roads: When there is visible track-out onto a paved public road, install wheel washers where the vehicles exit and enter onto the paved roads and wash the undercarriage of trucks and any equipment leaving the site on each trip. Sweep the paved street at

the end of each shift with a water spray pick-up broom-type street sweeper as necessary or as directed.

L. Vehicle Speeds: Maintain vehicle speeds to 10 mph or less.

M. Additional dust control BMPs include but are not limited to the following.

1. Prevention of dust generation is preferable to applying dust suppression measures. Ensure in the project schedule that the area of cleared land is minimized during the drier months of the year, when dust generation is at its greatest.

2. The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged. The soil shall be completely crusted over by application of water or completely covered with clean gravel or treated with an approved dust suppressant.

3. Ensure that smooth surfaces are deep ripped and left rough and cloddy to reduce the wind velocity at the soil surface.

4. Construct wind fences if appropriate for the site. As a contingency measure, in areas that do not have access to a water supply, water stored on-site should never be less than fifty percent of disturbed land surface. Wherever watering is used to suppress dust, ensure it does not create contaminated runoff that will contaminate surface waters.

5. Use barriers where required to prevent the migration of sawdust or particulates from sanding or surface preparation activities during construction.

1.0.4. SEDIMENTATION ABATEMENT

A. The Contractor shall be responsible for collecting, storing, hauling, and disposing of spoil, silt, and waste materials in compliance with applicable federal, state, and local rules and regulations and the Contract Documents.

B. Install and maintain erosion and sediment control measures, such as swales, grade stabilization structures, berms, dikes, waterways, filter fabric fences, and sediment basins.

C. Filter fabric barrier systems, if used, shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.

D. Remove and dispose of sediment deposits at the designated spoil area. If a spoil area is not indicated, dispose of sediment off-site at a location not in or adjacent to a stream

or floodplain. Sediment to be placed at the spoil area should be spread evenly, compacted, and stabilized. Sediment shall not be allowed to flush into a stream or drainage way.

E. Maintain erosion and sediment control measures until final acceptance or until requested by the Engineer to remove it.

1.0.5. RUBBISH CONTROL

A. During the progress of the work, the Contractor shall keep the site and other areas for which it is responsible in a neat and clean condition and free from any accumulation of rubbish. The Contractor shall dispose of rubbish and waste materials of any nature and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of rubbish and surplus materials shall be off the site in accordance with local codes and ordinances governing locations and methods of disposal and in conformance with applicable safety laws and the requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

B. It is important to maintain the construction site in a neat and satisfactory condition during the during construction and after construction has been completed. B. During construction, the Contractor shall regularly clean up all rubbish, surplus materials, and the adjacent areas affected. Unneeded construction equipment should be removed and all damages repaired so that the public and property owners will be inconvenienced as little as possible.

C. Any material or debris that has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes structures, or elsewhere during the course of the Contractor's operations must be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc., should, upon completion of the Work, be left in a clean and neat condition.

D. The Contractor shall perform the cleanup work on a regular basis and as frequently as ordered by the City or designee. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the City or designee, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.

E. Upon failure of the Contractor to perform periodic clean up and basic restoration of the site to the City or designee's satisfaction, the City or designee may, upon five (5) days prior written notice to the Contractor, employ such labor and equipment as it deems

necessary for the purpose, and all costs resulting there from shall be charged to the Contractor and deducted from amounts of money that it may be due.

F. On or before the completion of the Work, the Contractor shall tear down and remove all temporary buildings and structures; remove all temporary works, tools, and machinery or other construction equipment; remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around houses and other buildings; remove all rubbish from any grounds which has been occupied; and leave roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

G. Upon completion of the Work, the Contractor shall remove from the sites of the subsurface explorations all plant, machinery, tools, equipment, temporary work, and surplus materials; remove all rubbish from any grounds which has been occupied; and leave the roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

H. The Contractor shall thoroughly clean all materials and equipment installed, and, upon completion of the Work, deliver it undamaged and in fresh and new-appearing condition. All mechanical equipment should be left fully charged with lubricant and ready for operation.

I. The Contractor shall restore or replace, when and as directed by the City or designee, any public or private property damaged by work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, perform as required all necessary highway or driveway, walkway, and landscaping work. Suitable materials, equipment, and methods should be used for such restoration. The restoration of existing property or structures should be done as promptly as practicable as work progresses and should not be left until the end of the contract period.

1.0.6. SANITATION

A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: The Contractor shall establish a regular daily collection of sanitary and organic wastes. Wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with Laws and Regulations pertaining thereto.

1.0.7. CHEMICALS

A. Chemicals used on the work or furnished for facility operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.0.8. ADDITIONAL ENVIRONMENTAL CONSIDERATIONS – AFFECTED SOIL

A. Excavation of affected soil shall be accomplished as described in Section 02220 “Excavation – General".

B. Affected soil must be placed on an impermeable barrier when temporarily stockpiled. All stockpile leachate or runoff must be collected for disposal in accordance with applicable federal, state, and local regulations. Soils designated for removal and disposal shall be prepared for shipment, transported, and disposed of in accordance with the requirements of this Section.

C. Affected soils shall be processed at a state licensed facility. These soils shall be transported and disposed of in accordance with federal, state, and local regulations. The Owner shall be responsible for all soil analyses required for transportation and disposal.

D. The Owner shall be responsible for testing soil which has been incinerated to certify the treated soil meets applicable federal, state, and local regulations for final disposal.

E. Free Petroleum Product

1. Some free petroleum products which may be partly or entirely diesel fuel or gasoline may be encountered during excavation or removal of affected soil. The Contractor shall remove free petroleum product, if necessary, when a separate floating phase greater than 0.10-inch thick is present as required by health and safety considerations. The free petroleum product shall be removed by skimming, pumping to an oil/water separator, or other approved methods. The Contractor shall take reasonable precautions to ensure that solids are not entrained in the pumping process.

2. Free petroleum products shall be transported and disposed by the Owner in accordance with federal, state, and local regulations. The Owner is responsible for any laboratory analyses required for disposal of the free petroleum products.

F. Transport and Disposal

1. Transport Regulations: The Owner shall be responsible for the loading, labeling, placarding, marking, weighing, and transport of all waste materials in accordance with the Florida Department of Transportation Regulations, and U.S. Department of Transportation Regulations. The Owner shall use only transporters that are licensed and competent to haul these wastes.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01581 PROJECT SIGNS

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Project Signs

1. City's Responsibility: To supply, erect and remove signs.

2. Contractor Responsibility: To maintain signs and restore site.

PART 2 – PRODUCTS

2.0.1 PROJECT SIGNS

A. The City will supply signs for this Project. These signs will be produced, installed, and at the end of construction, removed by City's forces. During the construction period, the Contractor shall maintain the signs in good condition, satisfactory to the Engineer. Should the signs be defaced, damaged or destroyed, the Contractor shall be responsible for their repair or replacement to the satisfaction of the Engineer and no extra compensation will be allowed.

PART 3 – EXECUTION

3.0.1 MAINTENANCE

A. Maintain signs and supports and repair all damages to the satisfaction of the Engineer.

B. Restore site to original condition upon completion of Project.

END OF SECTION

01600 MATERIALS AND EQUIPMENT SHIPPING, HANDLING, STORAGE AND PROTECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This shall include both the City and Contractor supplied material and equipment.

B. The Contractor is to inform all Subcontractors, suppliers, and manufactures of the requirements herein specified and shall include expenses for the following services in his costs for compliance with the requirements hereinafter specified.

1.0.2. PREPARATION FOR SHIPMENT

A. When practical, equipment shall be factory-assembled. The equipment parts and assemblies that are shipped unassembled shall be furnished with assembly plan and instructions. The separate parts and assemblies shall be factory matchmarked or tagged in a manner to facilitate assembly. All assemblies are to be made by the Contractor at no additional cost to the City.

B. Machined and unpainted parts subject to damage by the elements shall be protected with an application of a strippable protective coating, or other approved protective method.

C. Equipment shall be packaged or crated in a manner that will provide protection from damage during shipping, handling, and storage.

D. The outside of the package or crate shall be adequately marked or tagged to indicate its contents by name and equipment number, if applicable; approximate weight; state any special precautions for handling; and indicate the recommended requirements for storage prior to installation.

1.0.3. PACKING AND DELIVERY OF SPARE PARTS AND SPECIAL TOOLS

A. Properly mark to identify the associated equipment by name, equipment, and part number. Parts shall be packaged in a manner for protection against damage from the elements during shipping, handling, and storage. Ship in boxes that are marked to indicate the contents. Delivery of spare parts and special tools shall be made prior to the time associated equipment is scheduled for the initial test run.

1.0.4. SHIPMENT

A. All equipment and material shall be shipped with freight and shipping paid FOB jobsite.

B. The Contractor shall request a 7-day advance Notice of Shipment from manufacturers, and, upon receipt of such notice, provide the Engineer with a copy of the current delivery information concerning equipment items and material items of critical importance to the project schedule.

C. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.

D. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.

1.0.5. RECEIVING

A. The Contractor shall unload and record the receipt of all equipment and materials at the jobsite.

B. All costs for receiving, inspection, handling, storage, insurance, inventory control, and equipment maintenance for both for both the Contractor-supplied and the City-supplied materials and equipment shall be included in the prices bid and no extra compensation will be allowed.

1.0.6. INSPECTION

A. Immediately upon receipt of equipment and materials at the jobsite, the Contractor shall inspect for completeness and any evidence of damage during shipment. Should there appear to be any shortage or damage, the Engineer shall be immediately notified; and the Contractor shall be fully responsible for informing the manufacturers and the transportation company of the extent of the shortage or damage. If the item or items require replacing or supplying missing parts, the Contractor shall take the necessary measures to expedite the replacement or supply of the missing parts.

1.0.7. HANDLING

A. Equipment and materials received for installation on this project shall be handled in accordance with the manufacturer's recommendations, and in a manner that will prevent damage.

B. Pipes shall always be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such a manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Pipe shall be stored on blocking or timber. It shall not be stored on rocks, boulders, or other supports which in the opinion of the Engineer are

unsuitable. Such materials shall be so placed as to keep obstruction to traffic to a minimum.

1.0.8. STORAGE AND PROTECTION

A. Equipment and materials shall be stored prior to installation as recommended by the manufacturer. Generally, materials such as pipe shall be stored off the ground in approved storage yards or along the line of the proposed pipeline as approved by the Engineer. Items subject to the damage by the elements, vandalism, or theft shall be stored in secure buildings.

B. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instructions shall be studied by the Contractor and he shall review them with the Engineer. Instructions shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.

C. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

D. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored, the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.

E. All bolts, nuts, gaskets and other joint materials for use in pipelines shall be stored under cover.

F. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light, oil gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

G. Plastic pipe and other elastomeric products shall be stored under cover to preclude damage by ultraviolet radiation even if the product has UV inhibitors in its compound.

1.0.9. INSURANCE

A. The Contractor's insurance shall adequately cover the value of materials delivered but not yet incorporated into the work. The Contractor and the City shall be named as co-insured insofar as their respective interests may appear. Proof of this coverage must be submitted to the Engineer at the time request for progress or partial payments.

1.0.10. INVENTORY CONTROL

A. Equipment and materials shall be stored in a manner to provide easy access for inspection and inventory control. The Contractor shall keep a running account of all materials in storage to facilitate inspection and to estimate progress payments for materials delivered but not installed in the work.

1.0.11. EQUIPMENT MAINTENANCE PRIOR TO THE CITYACCEPTANCE

A. Provide the required or manufacturer's recommended maintenance during storage, during the installation, and until such time as the City accepts the equipment for full-time operation.

1.0.12. SALVABLE EQUIPMENT

A. Any salvable pipe, or other miscellaneous material or equipment removed during construction and not reused in the work shall be cleaned, hauled, and stored by the Contractor at his own expense, where directed by the Engineer, and shall remain the property of the City. All other material shall be disposed of by the Contractor at his own expense.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01700 PROJECT CLOSEOUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work Included: This section outlines the procedure to be followed in closing all contracts.

1.0.2. RELATED SECTION

A. Section 01340 “Shop Drawings, Product Data, and Samples”.

B. Section 01720 “Project Record Documents”.

C. City of Opa-Locka General Covenants and Conditions.

1.0.3. FINAL INSPECTIONS

A. The City will not issue preliminary punch lists. After final cleaning and upon written notice from the Contractor that he has inspected the work and it is a 100% completed, the Engineer will make a preliminary inspection with the City and the Contractor present. Upon completion of this preliminary inspection, the Engineer will submit to the Contractor a written final punch list of any which this inspection reveals as defective or incomplete work.

B. Upon receiving written notice from the Engineer, the Contractor shall immediately undertake the work required to remedy the defects and complete the work to the satisfaction of the City.

C. Each item in the punch list shall have a time duration agreed upon by both parties which shall not exceed 10 calendar days. Punchlist items may be eliminated individually from the list when approved by the Engineer.

D. Should the Engineer find all work satisfactory at the time of the inspection, the Contractor will be allowed to make application for final payment in accordance with the provisions of the General Covenants and Conditions.

1. If the Contractor fails to complete any item of work within a time period equal to 100% of the agreed upon duration of time for all individual items, the Engineer will notify the Contractor in writing specifying the conditions pertaining thereto and directing the Contractor to comply with his directive. If the Contractor has not corrected such condition within 5 days of such notice, it shall be sufficient grounds for the Engineer to order the subject items discontinued and have them completely remedied in a timely manner at the expense of the Contractor.

2. No final estimate shall be issued by the Engineer until the Engineer has assured himself that the punch list has been 100% finished and all other related documents are submitted.

1.0.4. FINAL SUBMITTALS

A. The Contractor shall submit all closeout documents required by the Contract Documents, including but not limited to the following.

1. Warranties and guarantees

2. Test reports, including but not limited to:

a. Concrete test results certified by a licensed testing laboratory

3. Inspection and acceptance records

4. Operating and maintenance manuals

5. Project record documents

6. Permit closeout documentation

1.0.5. FINAL PAYMENT APPLICATION

A. Final payment application must include:

1. Final releases of liens from all subcontractors and suppliers

2. Final release from Contractor

3. Final consent of surety bond

4. The Contractor must obtain final Greenspace Management approval for installed landscaping

5. Upon receipt of Final Payment, the Contractor shall execute the Form of Final Receipt, if applicable

1.0.1. GUARANTEES, BONDS, AND AFFIDAVITS

A. No Contract will be finalized until all guarantees, bonds, certificates, licenses, roofing warranty, C.O. and affidavits required for work or equipment as specified are satisfactorily filed with the Engineer.

B. The Contractor shall comply with the Public Records Laws of the State of Florida.

1.0.2. ACCESSORY ITEMS

A. All Contractors furnishing and/or installing equipment and spare parts on this project shall provide to the City, upon acceptance of the equipment, all special accessories required to place each item of equipment in full operation.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01710 CLEANING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This Section specifies the maintenance of the work site in a clean, orderly, hazard free condition.

1.0.2. QUALITY ASSURANCE

A. Conduct cleaning and disposal operations in accordance with local ordinances and anti-pollution laws. Rubbish, volatile wastes, and other construction wastes shall be neither burned nor buried on the work site, and shall not be disposed of into storm drains, sanitary drains, streams or other waterways.

B. Final cleaning shall be accomplished either by workmen experienced in cleaning operations or by professional cleaners.

PART 2 – PRODUCTS

1.0.1. ON SITE WASTE CONTAINERS

A. Provide on-site waste containers for collection of waste materials, debris and rubbish. See Section 01100 “Special Project Requirements”, Subsection 1.0.4. regarding Safety Requirements for environmentally hazardous materials.

1.0.2. CLEANING MATERIALS

A. Cleaning materials shall be as recommended by the manufacturer of the surface to be cleaned.

PART 3 – EXECUTION

1.0.3. SAFETY REQUIREMENT

A. Maintain work site in accordance with local ordinances and anti-pollution laws applicable to work site cleanliness and in a neat, orderly and hazard-free condition until final acceptance of the work. Catwalks, accessible underground structures, work site sidewalks and walkways adjacent to the work site shall be kept free from hazards caused by construction activities.

B. Store volatile wastes including rags in covered metal containers and remove from work site daily.

C. Prevent accumulations of wastes which create hazardous conditions.

D. Artificially ventilate spaces which are not naturally ventilated when volatile or noxious substances are present in those spaces.

1.0.4. CLEANING DURING CONSTRUCTION

A. The Contractor shall at all times during the execution of this Contract keep the work site free and clear of all rubbish and debris. As soon as the work is completed, the accumulated rubbish or surplus materials shall be promptly removed. The Contractor shall also restore in an acceptable manner all property, both public and private, which has been displaced or damaged during the prosecution of the work and shall leave the site and vicinity unobstructed and in a neat and presentable condition.

B. In the event of delay exceeding two (2) days after written notice is given to the Contractor by the Engineer to remove such rubbish or materials or to restore displaced or damaged property, the Engineer may employ such labor and equipment as he may deem necessary for the purpose, and the cost of such work, together with the cost of supervision, shall be charged to the Contractor and shall be deducted from any monies due him. The Project shall not be considered as having been completed until all rubbish and surplus materials have been removed and disposed of properly.

C. Perform cleaning every workday for duration of the work. Structures, grounds, and areas of the work site, access roads and adjacent public and private properties shall be maintained free from accumulations of waste materials and rubbish caused by construction operations on the work site. Place waste materials and rubbish in on site containers or as otherwise approved. Unneeded construction equipment shall be removed and all damaged repaired so that the public and property owners will be inconvenienced as little as possible.

D. Remove or secure loose material on open decks and on other exposed surfaces at end of each day's work or more often to maintain work site in hazard-free condition.

E. Prevent dislodgement of materials due to wind and other forces. Wet down dry materials and rubbish to lay dust and prevent blowing dust. Cover or wet excavated material leaving and arriving at the site to prevent blowing dust. Clean the public access roads to the site of any material falling from the haul trucks.

F. Empty on-site waste containers whenever necessary so that trash overflow does not occur. Legally dispose of contents at either public or private dumping areas.

G. Control the handling of materials, debris and rubbish; do not drop or throw from heights.

H. Immediately remove spillages of construction-related materials from hauling routes.

1.0.5. FINAL CLEANING

A. In addition to the cleaning performed above, in preparation for final inspection, remove grease, dust, dirt, rust stain from surfaces. Remove labels, fingerprints and other

foreign materials from exposed exterior finished surfaces. Flush down all valve boxes, and areas leaving such surfaces clean of all sand, etc.

B. In preparation for final acceptance or occupancy, conduct final inspection and cleaning of exposed exterior surfaces, and of concealed spaces.

C. Maintain cleaning operations until project has been finally accepted.

END OF SECTION

01711 FINAL ACCEPTANCE

PART 1 – GENERAL

1.0.1. FINAL CLEANUP

A. At the completion of work and immediately prior to final inspection, cleaning of the entire project shall be accomplished according to the following provisions:

1. All temporary utility drops, fencing, and water supply outlets shall be removed.

2. All plant gate identification signs, barricades, tools, rubbish collection receptacles and other such items shall be removed by the Contractor.

3. All remaining earthen stockpiles of excess excavated material shall be graded to provide gentle slopes to prevent erosion as directed by the Engineer.

1.0.2. FINAL INSPECTION

A. Following final cleanup, the Contractor shall request an inspection by the Engineer, and Engineer of Record. If the Engineer accepts the work as being complete, then Final Acceptance shall be given to the Contractor in accordance with Contract.

1.0.3. FINAL ACCEPTANCE

A. Following successful final inspection, the Engineer shall approve the work as being complete and provide final acceptance of the work in accordance with the Contract.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01720 PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor is responsible for maintaining one record copy of:

1. Record Drawings. Record Drawings as used herein shall mean a drawing that reflects construction or design changes.

2. Record Specifications.

3. Addenda.

4. Change Orders and other modifications of the Contract.

5. Engineer's written orders or instructions.

6. Approved Shop Drawings (including product data and samples).

7. Field test records.

8. Construction photographs.

9. As-built dimensions and elevations as recorded on a daily basis by the Contractor's Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

10. Field Book. Survey Field notes taken by the PSM's survey crew (copy provided to the Engineer on a monthly basis)

11. The records listed above are always to be made available for the Engineer's review for all projects.

B. Vertical Datum: Nationwide, surveys and as-builts are in the process of conversion to NAVD 88 from the NGVD 1929. The City will accept NAVD 88 datum with a conversion factor on each page. The Florida Department of Transportation is using the NAVD 88 datum. Projects within FDOT roadway limits shall either use NAVD 88 datum or provide a conversion factor on each page if the NGVD 1929 datum is used. For projects using City of Miami datum provide a conversion factor on each page to the NAVD 88 datum.

1.0.2. MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain documents in a clean dry, legible, condition and in good order. Do not use record documents for construction purposes.

1.0.3. REQUIRED MEASUREMENTS

A. Set-up and Verification: The Contractor's PSM is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

B. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

C. The Contractor is required to have the PSM's survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

D. Field Book Information: The PSM is required to have his crews make daily visits to the Project site during underground pipe installation work to perform field measurements of the Contractor's daily installations. This information shall be recorded in field books. Copies of the field notes are required to be provided to the Construction Manager on a monthly basis. The PSM's field notes shall be submitted to the City along with partial as-built plans (signed and sealed) on a monthly basis as a condition of payment.

1.0.4. RECORDS

A. During the life of the Contract the Contractor shall retain the services of a PSM who shall maintain daily records of the installation, including all deviations from Plans and Specifications and for the purposes of preparing and submitting to the City an as-built/record survey in compliance with:

1. Florida Statutes Chapter 472.027.

2. Florida Administrative Code Chapter 5J-17.050, 5J-17.051 and 5J-17.052.

3. As further required by these Contract Documents.

B. Measure and Record all information for all projects concurrently with constructions progress.

1. The services of the PSM for the Project shall be retained by the Contractor prior to the issuance of the "Notice to Proceed." A letter from the PSM shall be provided at the Preconstruction Meeting indicating that the Contractor has secured his

services to perform all survey work for the duration of the project and prepare final as-builts plans.

C. Redline Drawings:

1. The Contractor shall maintain full size (22-inches by 34-inches) redline drawings to reflect the "record" items of work as the work progresses.

2. At a minimum, the redline drawings shall be reviewed on the 20th working day of every third month, or more often, as deemed necessary by Consultant, after the month in which the final Notice-to Proceed is given as well as on completion of Work. Failure to maintain the redline drawings up-to-date shall be grounds for withholding monthly progress payments until such time as the redline drawings are brought up-to-date.

3. Redline drawings shall be accessible to the City or designee at all times during construction period.

4. The cost of maintaining record changes, and preparation of the as-built record drawings shall be included in the unit prices bid for the affected items.

D. Label each document “PROJECT RECORD” in neat large printed letters.

1. Do not conceal any work until as-built information is recorded by the Contractor’s surveyor and, if so required, by the City surveyor.

2. All locations for future connections or tie-ins shall be left unburied and uncovered until the Contractor’s PSM measures and records the as-built information.

   a. All as-built and inspector information is to be made available to the Engineer daily for inclusion in the City records.

3. Restrained pipe, end line valves, thrust blocks shall be left uncovered for the last complete length. In line valves and tees shall be left exposed for one length on both sides plus the face end. Measure and record the elevation, horizontal and vertical alignment, and inclination for these items.

4. For all projects, the Contractor’s PSM shall maintain exact and extensive records of any deviations from the plans or specifications. These records shall be satisfactory to the Engineer, who’s decision shall be final, and enough to allow the production of accurate as-built plans which correctly and completely portray the work as constructed.

5. For all projects, the Contractor’s PSM shall record data as follows during the entirety of construction:

   a. For facility (e.g. a water or sewage plant, pumping station, or similar site if so, designated by City) projects, record as-built dimensions and elevations every

twenty-five feet or portion thereof along the pipeline and at every abrupt change in direction of the new line.

b. For pipeline projects, constructed in the public right-of-way dimensions and elevations every one-hundred feet or portion thereof along the pipeline and at every horizontal and vertical change in direction.

c. In all cases record locations and elevations for each valve, fitting, service line, fire hydrant, water sampling point, utility poles adjacent to the proposed line, overhead wires crossing the ditch line (approximate height above grade) and other appurtenances along the pipeline.

d. The identity, dimensions, location and elevation of any existing utility crossing the proposed line and so immediately adjacent to the new line as to be exposed by the excavation shall also be recorded. Locate, excavate expose and record the same data for any utility shown in the plans whose proximity to the proposed pipeline could affect the certification requirements of the new installation. Note that in instances of a very wide ditch due to ground conditions the recording of data for adjacent, paralleling, utilities shall only be required for lines which come within three (3) feet of the outside of the pipe being installed unless otherwise ordered by the Engineer who's decision shall be final.

e. Without exception, for all thrust blocks, the top elevation, outer dimensions, thickness of the block, length and location of any sheet piling, if used, shall be recorded by the Contractor's PSM.

f. Specific locations and elevation of equipment, the buildings and miscellaneous items installed inside them shall be recorded as applicable and as required by the Engineer.

g. Without exception, where the substitution of another piece of equipment for that shown on the plans has been allowed, the footprint, clearance and elevation dimensions shall be recorded by the Contractor's PSM and these changes shall be accurately and thoroughly portrayed on the as-built plans.

h. The Contractor's Licensed PSM shall prepare from the field data, as-built record drawings showing correctly, completely and accurately the installation, embracing all changes and deviations made during construction, including all construction variances, to reflect the work as it was constructed.

i. Record Drawings shall be prepared as specified hereinafter.

    1) Record Drawings shall be prepared as specified herein.

    2) Record Drawings and five (5) copies shall be signed and sealed by the PSM and shall be submitted to the City for the Engineer's review within

ten (10) calendar days following the completion date of successful pressure testing of all mains and appurtenances under this Contract.

j. If the Engineer determines that the drawings are not acceptable, they will be returned to the Contractor with a cover letter noting the deficiencies and/or reasons for the disapproval. Contractor shall have ten (10) calendar days to correct all exceptions taken by the Engineer and resubmit as-built record drawings to the Engineer for final acceptance.

1.0.5. DRAWINGS

A. During the life of the Contract, maintain records of all deviations from the plans and specifications and prepare therefrom As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Record Drawings for errors and omissions prior to submittal to the City and certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, Indicate the size, depth and voltage in each conduit.

B. Legibly Mark to Record Actual Construction: All data as previously specified for all installations by the Contractor's . For on-site structures and facilities work the Contractor's Florida Registered Land Surveyor shall record:

1. Depths of various elements of foundation in relation to datum plane.

2. All exposed and underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location, Horizontal and vertical locations of underground utilities and appurtenances, measured from permanent reference points, plant survey grids, property lines and similar.

3. Location of internal utilities and appurtenance concealed in the construction shall be referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.

4. Field changes in dimensions, locations and details.

5. Changes made by Engineer's written instructions or by Change Order.

6. Details not on original plans.

7. Equipment and piping relocations.

8. Major architectural and structural changes in structures, including tanks.

9. Architectural schedule changes according to Contractor's record and shop drawings.

10. Record drawings shall be prepared as specified hereinafter.

C. Specifications and Addenda: Legibly mark each section to record the following:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment installed.

2. Changes made by Engineer's written instructions or by Change Order.

D. Approved Shop Drawings: Provide record copies for system diagrams and drawings together with each element of process equipment, piping, electrical system and instrumentation system.

1.0.6. SUBMITTALS

A. Accompany submittal with transmittal letter in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name, address and phone number

4. Title and number of each Record Document

5. Contractor signature or of its authorized representative.

B. Record Drawings with five blue line copies which have been signed and sealed by the surveyor shall be submitted to the City for the Engineer's review. Drawings shall conform to recognized standards of drafting and the minimum technical standards as set forth by the Board of Professional Surveyors and Mappers, shall be neat, legible and on 24-inch by 36-inch Mylar. These materials shall be submitted to the City for the Engineer's review as a prerequisite for payment during the course of construction as previously specified and final, complete sets of documents within ten calendar days following the completion date of successful testing of all mains, equipment and appurtenances under this Contract. Final payment will not be made until the set of as-built record drawings and five sets of blue-line prints have been approved and accepted by the Engineer.

C. In cases where a portion of a pipeline system or parts of a process system are put into service, the above conditions shall apply for the in-service portion and monthly payments shall be withheld until the as-built drawings are accepted by the Engineer.

D. As-Built Record Drawings, as prepared by the Contractor's Florida Registered Land

Surveyor and submitted by the Contractor, shall comply with following criteria and standards, and as specified in Section 01725 “As-built Drawings”:

1. Title block must show the Contract or Project Title (as applicable); Contract number; City project number (if applicable); Contractor's name; Engineer of Record's name; Surveyor's name and address; date; location; and where appropriate to the work, size and type (i.e. water main, sanitary gravity main, sanitary force main) of main.

    a. Baselines or centerlines must be tied to section corners, monument line and right-of-way lines.

    b. Pipeline must be tied to baseline or centerline with stations and offsets.

    c. Baselines or centerlines must show bearings or deflection angles, or delta, radius, chord and arc length for curves.

    d. Show all horizontal curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

    e. Stationing must be the same as shown on construction drawings and must be tied to Section corners, centerline intersections and all other pertinent control points within the project. All such pertinent points shall have their stationing shown and where there is dual stationing for a point, both stations shall be called out.

    f. Identify all streets by name or number and show stationing at all intersecting streets.

    g. Refer to vertical datum plane and identify the location, elevation and source supplying the benchmark used.

    h. Tie easement lines to survey baseline or platted centerline and rights-of-way.

    i. Show horizontal and vertical locations of all fittings, deflections, or at any significant change of direction, and at a maximum of 100-foot intervals along the pipeline for off-site (e.g. in the public right-of-way) and at maximum 25-foot intervals for on-site (e.g. on a facility such as a pump station or plant) work.

    j. Elevations of natural ground or pavement over the pipeline must be shown at each position where the pipe elevation is shown and at intervening high and low points.

    k. Show all invert and bottom elevations of pipes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

l. Locations and elevations together with diameter, thickness and material of all casings.

m. Location, top and bottom elevations of all sheeting left in place.

n. Coordinate values used inside plants shall be the local, City established coordinate systems referenced to the property boundary.

E. Update of Construction Documents:

1. All "proposed" information shall be removed from as-builts, leaving only "as-built" information reflected in drawing.

2. Upon completion of the Work, the Contractor shall furnish the Consultant the as-built record drawings. Pay request quantities must match as-builts record drawings. The completed as-built record drawings shall be delivered to the Consultant at least 48 hours prior to final inspection of the work. The final inspection will not be conducted unless the as-built record drawings are in the possession of the Consultant.

3. The City reserves the right to have a Registered PSM perform spot checks of as-built information provided by the Contractor. The City shall pay the costs of such survey work when the work is performed by a City of Opa-Locka Contractor. Should any spot checks indicate that any portion of the installation does not comply with the Contract Documents, a recheck shall be performed by another (or third) Registered PSM or agreed to by both the City and Contractor at the Contractor's expense. If the recheck confirms the first check, that portion of the work shall be removed and replaced or modified at no additional cost to the City until satisfactory compliance is attained.

F. Certification: The Contractor shall certify on as-built record drawings all other actual constructed details and information as may be required by the City including but not limited to:

1. Pipeline must be identified by type of pipe material and manufacturer.

2. Types and sizes of sheeting and piling together with measured and complete; location, dimensional and elevation data on any pile caps, tie backs, anchors, whalers or other appurtenant structures left in place.

G. Digital Records: The City reserves the right to require submittal of as-built drawings in AutoCAD format and in PDF format. The AutoCAD file shall be compatible with the City's system and capable of being uploaded without external reference files. Graphical information contained on electronic media shall be the same as provided on plan sheets. Digital Records shall be delivered to the office of the City Engineer, Engineering Division, Opa-Locka Public Works Department at 12950 NW 42 Ave in Opa-Locka, FL 33054. A letter of transmittal shall be provided, containing a list of all files and data being provided.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section shall serve to set out guidelines for as-built drawings submitted to City of Opa-Locka.

B. To ensure that as-built drawings may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The City of Opa-Locka Public Works Department will consider the following elements during as-built during review to ensure the quality of the as-built drawings.

C. The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice established in Chapter 5J-17.050 to 5J-17.052 of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes. The approved final record as-built shall be used as part of the City of Opa-Locka's GIS and Record System.

D. The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

E. As-built drawings shall be prepared in a professional manner consistent with common engineering standards for layout, lettering, and line-work.

F. As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

G. Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

H. As-built drawings shall include all disciplines in the Bid Set drawings.

1.0.2. CRITERIA FOR AS-BUILTS

A. Horizontal: All horizontal control and locations shall be tied to the Florida State Plane Coordinate System, East Zone (NAD 83/2011).

B. Vertical Datum: All vertical control and elevations shall be referenced to National Geodetic Vertical Datum of 1929 (NGVD 1929).

1.0.3. AS-BUILT REVIEW PROCESS

A. SUBMITTAL PACKAGE

The following shall be submitted as one package in order to be accepted for initial

review by the Inspections Unit.

1. Initial submittal (prior to performing field testing) shall include the following: 1 set of signed and sealed as-built (DWFX file), signed and sealed field book information, DWFX file of the as-built and the City Minimum Requirements As-built Plan Submittal.

2. Final submittal shall consist of corrected As-Built Documents in digital format (AutoCAD and DWFX files) and the following sets of signed and sealed as-builts sets:

   Five (5) sets.
   Signed and Sealed Copy of Field Book Information.
   As-builts signed and sealed by the Florida Licensed Professional Surveyor and Mapper and/or Engineer of Record must comply with format requirements.

B. CITY PROCESSING.

1. The City will require Ten (10) business days to perform the as-built review.

2. As-builts will be initially checked by the responsible Field Inspector to verify that they are an accurate representation of the work as installed and that the job as shown is complete and in accordance with the permitted plans.

3. Following the Field Inspector's review, as-builts will be reviewed in depth by the As-Built Reviewer to ensure compliance with these standards. The Reviewer will also check the complete package which includes the Bill of Materials.

C. PUNCH LIST

1. Punch List items may be generated from the City initial review. Successive reviews are solely for the purpose of ensuring that original punch list items are completely and correctly done to obtain a final As-built acceptable to the City.

2. Successive punch list items may only be added to correct a problem resulting from submitter's efforts to comply with the original punch list. No new original punch list item(s) may be added. Submitter shall be required to make these successive changes.

3. In the case of an oversight on the part of the As-built Reviewer, punch list items may be added to the list or requested of the submitter after the valid time for such items. The City requires that all corrections be made as a condition of accepting the final as-builts.

4. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. Annotations to the Contract Documents shall be made with an erasable colored pencil conforming to the following color code:

Additions - Red
Deletions - Green
Comments - Blue
Dimensions - Graphite*

*Legibly mark to record actual depths, horizontal and vertical location of all above and below grade structures, underground pipes, valves, raceways, cables, and appurtenances referenced to permanent surface improvements.

1.0.4. AS-BUILTS SUBMITTAL REQUIREMENTS

A. GENERAL REQUIREMENTS

1. Prior to final acceptance, two (2) copies of as-built drawings certified by a Florida Registered Land Surveyor shall be provided to the City for approval, acceptance and certification by the "Engineer of Record", together with a copy of digital media producing such As-Builts.

2. At minimum, the As-Built must show Station numbers and horizontal offsets from the Base Line and Right-of-Way lines on a Plan scaled 1"=20 ft. for all fittings, valves and changes in horizontal alignment, and a profile with a vertical scale of not less than 1" = 2 ft. with elevations at all horizontal and vertical changes in alignments and grade profile elevations at approximately 50 ft.

3. As-Built plans and profiles must also show all abandoned pipes and plugs that were modified within the project limits and actual elevation/description of all other utilities crossing or encountered in the vicinity of the new water mains. The paper size of the drawings shall be 22"X 34".

4. Any deviations from the design plans must be approved by the City.

B. QUALITY OF AS-BUILTS

To ensure that as-builts may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The As-built Reviewer will consider the following elements to ensure the quality of as-builts.

1. Accuracy: The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice of the Florida Administrative Code. The approved final record as-built shall be used as part of the City GIS and Record System.

2. Field Changes: The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

3. Appearance: As-builts shall be prepared in a professional manner consistent with common engineering standards for layout, lettering and line-work.

4. "Understandability": As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

5. Clarity: Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

1.0.5. AS-BUILT CONTENT REQUIREMENTS – ALL DRAWINGS

A. All drawings submitted to the City of Opa-Locka Public Works Department shall include at a minimum the following, where applicable.

1. Centerlines, right-of-way lines, right-of-way dimensions, street widths and names, with matching plat, if applicable, subdivision name, phaseline, and number. (Phasing to be nearest valve and manhole in limits of phase area).

2. Baselines, monuments, monument lines, lot lines, parcel lines.

3. All involved lots and blocks shown and correctly designated (to match plat).

4. All control lines identified (i.e., centerline, section line, etc.). Identify all streets by name or number and show stationing at all intersecting streets.

5. Baseline shall be tied to centerlines, boundary lines, section corners, or to monument lines or to right-of-way lines. Baselines must show bearings or deflection angles, or delta, radius, chord, and arc length for curves.

6. Pipeline installation shall be tied to a baseline that easily identified on the existing or proposed right-of-way. Baseline shall not be on top of the main except for gravity sewers installed on centerlines.

7. Show all existing water, sewer and/or stormwater mains as a broken line (i.e., dashed). Show proposed utility as dark solid line. Also, identify respective utility pipe, size, and material type. Existing or proposed mains 20-inches in diameter and greater, shall be shown as two lines (i.e., double line) of the line type as stated.

8. Show all horizontal and vertical curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

9. Easements:

a. Easements type and size shall be clearly shown with size and tied to centerline. The easements shall be separate for water, sewer, force main, and pump stations.

b. Existing Official Record Book (ORB) or other record information must be shown.

c. Easement lines shall be tied to the centerline of the main.

10. Separate profile for each segment and utility type (water, sanitary sewer, stormwater, etc.).

11. Every utility (water, sewer, sewer laterals, water services, gas, electric, stormwater, telecommunication, duct banks, etc.) encountered and/or crossing drainage, water, or sanitary sewer facilities (whether it is a conflict or has sufficient clearances) shall be located, both horizontally and vertically. The clearance between the facilities horizontal and vertical, shall be noted. For instance, if a 2-inch gas main crosses over the top of a 6-inch potable water main, the bottom elevation of the gas main shall be noted and the top of the water main shall be noted. The difference between the two facilities will be the clearance between the two facilities. Parallel mains shall note the clearance between the outside of the mains. It shall be the Contractor's responsibility to note these crossings on a daily basis and ensure that this information is reflected on the As-Built Drawing plan set. Crossings will not require state plane coordinates.

12. All utilities shall be stationed and all facilities labeled. Drawings shall show stations for all services. Lengths and distances for service runs shall also be given.

13. Clearly show and label what is new and what is existing at the tie-in points.

14. Show all outlets, stub-outs, sewer lateral, water service and any other relevant information. Identify the size, material, length, direction, and elevation (top of pipe for water, sewer, and stormwater and force mains, invert gravity sewer and stormwater mains).

15. Elevations of natural ground or pavement over pipelines shall be shown at each position where the pipe elevation is shown at least every 100 feet.

16. Manhole rim and valve box manhole rim elevations shall be shown.

17. Show all invert and bottom elevations in manholes and valve vaults or boxes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

18. Locations, elevations, and size of all casings shall be shown.

19. Locations and top and bottom elevation of all sheeting, including sheeting left in place, shall be shown.

20. Provide State Plane Coordinate values for all visible features such as valves, manholes, maintenance access structures, fire hydrants, water meters, cleanouts, and backflow preventers. Also provide State Plane Coordinate values for existing valves and manholes at points of connection or closest to the point of connection and the point of connection itself.

21. Lines that are abandoned in place shall be located during construction and clearly identified (dashed and bold line type) on the drawings to include cut and plug locations and pipe material.

1.0.6. AS-BUILT CONTENT REQUIREMENTS – PAVING, GRADING, AND DRAINAGE DRAWINGS

A. Paving, grading, and drainage drawings shall include at a minimum the following, where applicable.

1. All existing and proposed utilities in the public right-of-way shall be shown on the paving, grading, and drainage plans. All utilities shall be identified and located by dimension, horizontally and by elevation, and their materials of construction shall be noted to the extent determinable without excavation.

2. Cross-section(s) and/or typical section(s) of proposed road and drainage construction, shall show dimensions, materials, and purposes of all existing (to remain) facilities as well as all proposed facilities within the right-of-way.

3. Pavement marking and signing drawings shall include sign locations.

B. All rock elevations for parking lot, roadways, and swale areas shall include at a minimum the following.

1. Rock elevations at all high and low points, and at enough intermediate points to confirm slope consistency and every 50 feet for roadways.

2. Rock elevations shall be taken at all locations where there is a finish grade elevation shown on the design plans.

3. All catch basin and manhole rim elevations shall be shown.

4. Elevations around medians will also be required.

5. Elevations shall be taken on all paved and unpaved swales prior to placement of asphalt and/or topsoil/sod, at enough intermediate points to confirm slope consistency and conformance to the plan details.

C. Retention area elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be as-built as well.

1.0.7. AS-BUILT SURVEY

A. An as-built survey will be required upon completion of all construction projects that lay within City-owned properties, including, but not limited to, City rights-of-way, easements, parcels, and submerged lands, etc. All improvements, including but not limited to, landscaping will be required.

B. As-built surveys shall be prepared in accordance with FAC Chapter 5J-17.051 and all applicable Standards of Practice.

C. When performing as-built surveys, the surveyor and mapper shall obtain field measurements of vertical or horizontal dimensions of constructed improvements so that the constructed facility can be delineated in such a way that the location of the construction may be compared with the construction plans.

D. As-built survey maps shall clearly show by symbols, notations, or delineations, those constructed improvements located by the survey.

E. The vertical and horizontal accuracy of the measurements made shall be such that it may be determined whether the improvements were constructed consistent with planned locations.

F. The Surveyor shall be responsible for the location, establishing or replacement of Vertical and Horizontal Survey Control Points.

G. Complete topographic and boundary survey for the project shall be signed and sealed by the Florida Licensed Professional Surveyor and Mapper as part of the as-built plans. All information required of a boundary survey shall be contained on the as-built plans to include the legal description of the site, easements and rights-of-way abutting the site and location of all surface facilities recorded by a PSM. All utilities within the property shall be properly shown, along with their associated elevation and clearance.

1.0.8. CERTIFICATION

A. All as-built drawings are to be certified to the City of Opa-Locka Public Works Department and all sheets are to be signed and sealed as previously outlined.

B. As-builts shall include a signed, sealed, and dated certification statement by the responsible Florida Licensed Professional Surveyor and Mapper that all measurements were recorded under his direction and are accurate.

C. Any civil drawings that are not surveyed shall also be included in the set and shall be signed and sealed by the Engineer of Record.

D. As-builts that contain electrical, mechanical, or structural work shall also be signed and sealed by the Engineer of Record to indicate that the work was constructed as designed.

E. It is the responsibility of the Contractor to check the as-builts for errors and omissions prior to submittal to the City and certify in writing that the as-builts are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, indicate the size, depth, and voltage in each conduit.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01730 OPERATING AND MAINTENANCE INSTRUCTIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Prepare Operating and Maintenance (O & M) Manual covering all equipment and systems provided under this project.

B. Instruct the City's personnel in the operation of equipment and maintenance provided under this project.

C. This Section covers the services of the manufacturer's representatives and special coordinating services required of the Contractor that shall apply during construction, facilities startup, and training of the City's personnel for facilities operation.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.2. SUBMITTALS

A. Not later than 30 days after the start of Construction, submit for review and approval by the Engineer two copies of a preliminary draft of the O&M manual, showing the proposed format and an outline of the contents.

B. Throughout construction, prepare O&M sections for equipment and systems when such equipment and systems, and shop drawings and technical data therefor, are approved. Within 30 days following receipt of the Engineer’s approval of the final shop drawing submittal, submit, in duplicate, draft of complete O&M Manual for review and approval of Engineer.

C. Within 30 days after receipt of Engineer’s review comments, make required revisions and submit in final form two copies of the O & M Manual for final approval.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.3. FORM, FORMAT AND SUBMITTALS CONTENTS

A. Operating and maintenance manuals will be used for use by the City personnel in the operation and maintenance of the various systems.

B. The City shall be furnished with one set of any special tools required for servicing for

each type of equipment actually furnished. These tools shall be provided to the Pump Station Maintenance Division.

C. Prepare data in the form of an instructional manual for use by the City personnel.

D. Format:

1. Size: 8½ in. x 11 in.

2. Paper: 20-pound minimum, white, for typed pages.

3. Text: Manufacturer's printed data or neatly typewritten.

4. Drawings:

a. Provide reinforced punched binder tab, bind in with text.

b. Fold larger drawings to the size of the text paper.

5. Provide fly-leaf for each separate product, or each piece of operating equipment.

a. Provide typed description of product, and major component parts of equipment.

b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:

a. Title of Project.

b. Identify of separate structure as applicable.

c. Identity of general subject matter covered in the manual.

E. Binders

1. Commercial quality three-ring binders with durable and cleanable plastic covers.

2. Maximum ring size: As required (Minimum 1½-inches).

F. Content of Manual

1. Neatly typewritten table of contents, arranged in a systematic order.

a. Contractor, name of responsible principal, address and telephone number.

b. A list of each product required to be included, indexed to the content of the volume.

c. List, with each product, the name, address and telephone number of:

1) Subcontractor or installer.

2) Maintenance Contractor, as appropriate.

3) Identify the area of responsibility of each.

4) Local source of supply for parts and replacement.

5) Identify each product by product name and other identifying symbols as set forth in Contract Documents.

G. Product Data:

1. Include only those sheets which are pertinent to the specific product.

2. Annotate each sheet to:

a. Clearly identify the specific product or part Installed.

b. Clearly identify the data applicable in the installation.

c. Delete references to inapplicable information.

H. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:

a. Relations of component part of equipment and system.

b. Control wiring, schematic wiring, and flow diagram.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.

3. Do not use Project Record Documents as maintenance drawings.

I. Written text, as required to supplement product data for the particular installation:

1. Organize in a consistent format under separate headings for different procedures.

2. Provide a logical sequence of instructions for each procedure.

J. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for City's personnel, give:

a. Proper procedures in the event of failure.

b. Instances which might affect the validity of warranties or bonds.

1.0.4. MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and tests.

c. Complete nomenclature and commercial number of all replaceable parts.

2. Operating Procedures:

a. Start-up, break-in, routine and normal operating instructions.

b. Regulation, control, stopping, shut-down, and emergency instructions.

c. Special operating instructions.

3. Maintenance Procedures:

a. Routine operations.

b. Guide to "trouble shooting".

c. Disassembly, repair, and reassembly.

d. Alignment, adjusting, and checking.

4. Servicing and lubrication schedule:

a. List of lubricants required.

5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, illustration, as drawings and diagrams required for maintenance.

a. Predicted life of parts subject to wear.

b. Items recommended to be stocked as spare parts.

8. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

9. Other data as required under pertinent sections of specifications.

B. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and test.

2. Switchgear, transformers, and motor control centers.

a. Coordination summary.

b. Relay settings.

c. High voltage switch instructions.

d. High voltage cable termination and splice instructions.

3. Operating procedures:

a. Routine and normal operating instructions.

b. Special operating instructions.

4. Maintenance procedures:

a. Routine operations.

b. Guide to “trouble-shooting”.

c. Disassembly, repair and reassembly.

d. Adjust and checking.

C. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

D. Additional requirements for operating and maintenance data: The respective sections of Specification.

1.0.5. SUBMITTAL OF MANUALS

A. Two draft copies of the complete operating and maintenance manual shall be submitted for review by the Engineer within 30 calendar days after approval of all shop drawings. One copy will be return to the Contractor within 30 days after receipt by the Engineer.

1.0.6. POSTED OPERATING INSTRUCTIONS

A. General: Operating instructions and diagrams shall be prepared for posting near the equipment. Posted operating instructions shall be photographic or equal non-fading reproductions framed under glass encased in non-discoloring plastic and shall be mounted in location directed. Copies of the posted operating instructions shall also use with the operating and maintenance manuals as a basis in training employees in the operation and maintenance of systems and related equipment installed.

B. Contents: Posted operating instructions shall consist of simplified, consolidated equipment, control and power diagrams graphically representing the entire system and actual equipment installed, including concise written instructions on how to start and stop systems, what settings and conditions are to be observed and what control adjustments are to be made or maintained by the operation.

1.0.7. MANUFACTURES'S NAMEPLATES

A. Each major component of equipment to have manufacturer's name, address, model number and rating on a plate securely affixed in a conspicuous place. Nameplate of a distributing agent will not be acceptable in lieu of manufacturer's nameplate.

B. Nameplate shall be die-stamped, engraved, or etched to guarantee long term legibility.

1.0.8. GUARANTY/WARRANTY

A. The Contractor shall guarantee that all new equipment has the capacity specified and that it will operate without excess noise or vibration.

B. Contractor shall furnish a written guarantee covering all workmanship and materials for a period of one (1) year, from the date of acceptance. This shall include an agreement to repair or replace, at his expense, all defects that may appear in that time, which in the opinion of the Engineer, are due to defective workmanship or materials.

C. Copies of factory warranties on all equipment furnished shall be submitted with the above described, written guarantee period, and included in maintenance manuals.

1.0.9. OPERATING AND MAINTENANCE RESPONSIBILITY

A. Contractor shall provide all required service and maintenance on all equipment installed under this contract for one (1) year following final acceptance or the beginning of beneficial use by the City. The starting date of one (1) year service period shall be determined by the City. Included in the service and maintenance to be provided during this one (1) year period, shall be the following:

1. All required lubrication, adjusting belt tensions, eliminating excessive noise and vibration.

2. Correcting all electrical and mechanical faults, recording all permanent installed gauge meter and temperature readings.

3. General service items, including the answering of service calls.

B. Service during construction:

1. General: Competent and experienced technical representatives shall represent the manufacturers of all equipment and systems as many days as may be necessary to resolve assembly or installation problems at the worksite which are attributable to, or associated with, the equipment furnished. This requirement applies to manufacturers of all equipment furnished, whether or not specifically set forth in the Technical Specifications.

2. Manufacturer's Certificate of Proper Installation: Where called for in the Technical Specifications, the manufacturer's representative shall provide a certificate stating that the equipment or system has been installed in accordance with the manufacturer's recommendation and has been inspected by a manufacturer's authorized representative, that it has been serviced with the proper initial lubricants, that applicable safety equipment has been properly installed, and that the proper electrical and mechanical connections have been made.

C. Functional testing assistance:

1. Where functional (or run) testing is called for on the Technical Specifications, the manufacturer's representative shall assist with the initial test, which shall include checking for proper rotation, alignment, speed, excessive vibration, and noisy operation. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative. The previously specified Manufacturer's Certificate of Proper Installation shall include the statement that proper adjustment has been made and that the equipment or system is ready for plant startup and operation.

2. The Contractor, as applicable to the equipment furnished, shall state in writing that all necessary hydraulic structures, piping systems, and valves have been successfully tested; that all necessary equipment systems and subsystems have been checked for proper installation, started, and successfully tested to indicate that they are all operational; that the systems and subsystems are capable of performing their intended functions; and that the facilities are ready for startup and intended operation.

3. Training of Owner's Personnel:
Where called for in the specifications, the manufacturer's representative shall provide detailed instructions to the City personnel for operation and maintenance of the specified equipment. These training services shall include pre-startup

classroom and onsite equipment instruction and/or post-startup classroom and onsite equipment instruction, as stated in the specifications.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Where the City has obtained various permits for this Project, copies will be appended at the rear of the Specifications.

B. The Contractor shall familiarize himself with, and comply with, all requirements of these permits and their issuing authorities. All other necessary permits shall be obtained by the Contractor.

C. The Contractor's particular attention is called to any special conditions of the permits relating to construction procedures, excavation and backfill requirements, open trench restrictions, asphalt concrete pavement restoration, turbidity controls, and all other general and special conditions. In the event any of the conditions of the permits are in conflict with the requirements of these Specifications, the more stringent conditions of the permits shall take precedence.

D. Any deviations from the Plans, Specifications or permits appended thereto, must first be approved by the Engineer even if approval for the change has been given by the permitting agency.

E. The Contractor shall assume throughout the life of the Contract all obligations and responsibilities imposed on the City as permittee of the aforementioned permits. All expenses necessary for compliance with the regulations and requirements of each permitting agency and its permit shall be borne by the Contractor and shall be included in his overall bid price.

F. The cost of any fees such as impact fees, inspection fees, etc. and the cost paid for all required permits shall be borne by the City. The Contractor shall pay the required fees, obtain the permit(s) and then upon submission of proof of cost to the City, be reimbursed for said cost out of the Permit Fee Dedicated Allowance Item. This shall apply only to required permits and fees. Permits obtained or fees paid for the advantage of the Contractor or non-required permits obtained for whatever reason shall not be reimbursed. The necessity or non-necessity of a permit or fee shall be determined by the Engineer whose word shall be final. As specified in the paragraph above, all costs of compliance with the permit(s) shall be borne by the Contractor and included in his bid price.

G. All surveying required by the Project permits shall be done by the Contractor's Registered Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall be responsible for providing the Engineer with Maintenance of Traffic (M.O.T.) plans for lane closures and/or detours for approval. These M.O.T. plans shall be produced by an individual employed by the Contractor and certified as "Work Zone Traffic Safety Supervisor" by the American Traffic Safety Service Association, ATSSA.

B. The Contractor shall be responsible for the maintenance of public streets and traffic control for the duration of the project. The cost of Traffic Control including the cost of any required off duty police officers shall be included under the appropriate bid item in the Proposal. If no bid item for this is included, said costs shall be included in other appropriate items of the bid and no extra compensation will be allowed.

1.0.2. REGULATIONS

A. As used herein, any reference to City of Opa-Locka, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over areas or streets, or their departments, published regulations, permits or data. The Contractor shall abide by all applicable laws, regulations, and codes thereof pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

1.0.3. MAINTENANCE OF TRAFFIC (M.O.T.)

A. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control, and other provisions throughout the Project as required by the City of Opa-Locka, Miami-Dade County Department of Transportation and Public Works (MDCDTPW) Traffic Division, Florida Department of Transportation (FDOT), or other governing agency. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the MDCDTPW Manual. No street shall be completely blocked, nor blocked more than one-half at any time, keeping the other one-half open for traffic, without specific approval. Hard closures require approval from the City of Opa-Locka Transportation Department

B. An off-duty City of Opa-Locka police officer is required. Off-Duty Office phone number is (305) 681-1033.

C. The Contractor shall provide all barricades with warning lights, necessary arrow boards and signs, to warn motorists of the work throughout the project. Adequate approved devices shall be erected and maintained by the Contractor to detour traffic.

D. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times.

E. The Contractor shall provide necessary access to all adjacent property during construction.

F. The Contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the MDCDTPW Manual. In addition, the Contractor shall be responsible for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, the Contractor is alerted that vehicle loop detectors may have been embedded in the pavement. Every effort has been made to show the approximate locations on the plans; however, the Contractor shall verify these locations by inspecting the site of the work and by contacting the Traffic Division. Any loop detector which is damaged by the Contractor, whether shown on the plans or not, shall be repaired or replaced by the Contractor, at his expense, and to the satisfaction of the Traffic Division.

H. The Contractor shall notify the Traffic Division twenty-four (24) hours in advance of the construction date, and forty-eight (48) hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed, and the swale or median areas restored to their previous condition.

J. Pavement markings damaged during construction shall be remarked, as required by the Traffic Division.

PART 2 – PRODUCTS

2.0.1. MAINTENANCE OF TRAFFIC PLANS

A. For construction within the City public right-of-way, the Contractor shall submit two sets of maintenance of traffic (MOT) plans for review to the City of Opa-Locka Public Works Department and the agency having jurisdiction.

B. MOT plans should be designed and developed by a certified MOT Specialist when normal traffic flow will be impacted causing unexpected or confusing situations in unclear travel path for motorist/pedestrians when entering non advanced warning work zones. MOT work zone traffic controls separate and protect workers, pedestrians and motorists delineating areas closed to traffic.

C. MOT plans must be designed in accordance with the requirements of the agency having jurisdiction.

D. MOT plans must be site-specific.

E. MOT plans will be reviewed and approved by the agency having jurisdiction.

F. MOT plans shall be in color.

PART 3 – EXECUTION

NOT USED

END OF SECTION

DIVISION 2 – SITE WORK

02210 SITE GRADING

PART – 1 GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall perform grading work within the limits, elevations and grades indicated on the plans and as specified herein.

1.0.2. RELATED WORK

A. Section 01031 “Grades, Lines and Levels”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

C. Section 02510 “Asphaltic Concrete Pavement”.

1.0.3. QUALITY CONTROL

A. The site shall be graded to the required elevations. Spot elevations are shown on the plans and the finished surfaces shall be uniformly sloped between these locations.

B. Suitable excavated material shall be used in the formation of embankments. The Contractor shall provide all additional fill material required to complete the embankments.

1.0.4. EXISTING CONDITIONS

A. Known underground, surface, and aerial utility lines and buried objects are based on best available data and indicated on the plans. Contractor shall verify all locations.

1.0.5. PROTECTION

A. Protect trees, shrubs, and lawns and other features remaining as part of final landscaping.

B. Protect bench marks, existing structures, fences, roads, sidewalks, paving, and curbs against damage from equipment and vehicular traffic.

C. Protect aerial, surface, or underground utility lines or appurtenance which are to remain.

PART 2 – PRODUCTS

2.0.1. FILL

A. Unless otherwise noted, suitable fill material shall be non-cohesive, non-plastic, granular mixture of local sand and lime rock, shall be free from vegetation, organic material or muck and shall contain not more than 8 percent material by weight which passes the No. 200 sieve. Broken concrete shall not be used in the fill. Fill material containing lime rock shall have sufficient sand to fill the voids in the lime rock, and no individual rocks or pieces of hard material that will not pass a 6-inch diameter ring shall be used in the fill; except that the upper 4-inches of all backfill or fills shall not contain any rock or hard material that will not pass a 3-inch diameter ring. All fill material shall be provided by the Contractor from any excess suitable on-site material or from off site sources, all subject to review and acceptance by the Engineer prior to use. The Contractor shall be responsible for determining the volume of material required for the site.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. Establish and identify required lines, levels, contours, and datums.

B. Maintain benchmarks, monuments, and other reference points. Re-establish if disturbed or destroyed at no cost to the City.

C. Before start of grading, establish the location and extent of utilities in the work areas. Notify utilities to remove and relocate lines which are in the way of construction.

D. Maintain, protect, reroute, or extend as required existing utilities to remain which pass through the work area.

3.0.2. REMOVAL OF TOPSOIL

A. Topsoil of horticultural value shall be stripped from areas of construction under this contract and stockpiled in area designated by Engineer. Said material shall be stockpiled separately from fill material.

B. Do not permit topsoil to be mixed with subsoil.

C. Do not strip topsoil when wet.

D. Do not drive heavy equipment over stockpiled topsoil.

3.0.3. ROUGH GRADING

A. Rough grade site to required levels, profiles, contours, and elevations ready for finish grading and surface treatment. Maintain the following:

1. Sodded areas: 4 ½-inches below finished grade elevation

2. Seeded areas: 6-inches below finished grade

3. Paved areas: 21½-inches below finished grade elevations

4. Shrub beds: 24-inches below finished grade elevations

5. Flower beds: 18-inches below finished grade elevations

6. Concrete sidewalks: 6-inches below finished grade elevations

B. Prior to placing fill material over undisturbed subsoil, scarify surface to depth of 6-inches.

3.0.4. GRADING AND COMPACTION

A. Fill material shall be placed in lifts not to exceed 8-inches and compacted to a density of not less than 95 percent of maximum density at optimum moisture as determined by ASTM D 1557. Fill material shall be within plus or minus 2 percentage points of optimum moisture content. The minimum density acceptable at any location within the pavement subgrade shall be as specified in Section 02745 "Asphaltic Concrete Pavement".

3.0.5. FINE GRADING

A. After structures, bases and pavements are completed and the yard piping trenches backfilled, the disturbed areas of the site shall be fine graded. All construction debris, regardless of size, shall be removed. The completed surface shall be shaped and sloped to drain away from the structures. The completed surface shall be within 0.1 foot of the elevations shown on the plans, unless otherwise accepted by the Engineer. Minor adjustments to line and grade may be required as the work progresses in order to satisfy field conditions.

3.0.6. SURPLUS MATERIAL

A. Remove surplus materials from site.

B. Dispose of surplus material at no cost to the City.

END OF SECTION

02220 EXCAVATION – GENERAL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work specified in this section consists of the removal of protruding objects as required to prepare the area of the proposed construction, and the removal and disposal of all product and debris which are not required to be salvaged or nor required to complete the construction.

1.0.2. RELATED WORK

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

3.0.1. REGULAR EXCAVATION

A. Regular Excavation shall include roadway excavation and borrow excavation, as defined for each.

B. Roadway Excavation shall consist of the excavation and the utilization or satisfactory disposal, of all materials necessary for the construction of the roadway, side ditches, etc., within the limits of the roadway right of way as show in the plans.

3.0.2. BORROW EXCAVATION

A. Borrow Excavation shall consist of the excavation and satisfactory utilization of material from authorized borrow pits. It shall include only material that is suitable for the construction of roadway embankments or of other work of constructing embankment covered by the contract and unsuitable material in borrow areas furnished by the City, which must be excavated as determined by the Engineer, in order to obtain the suitable material.

3.0.3. LATERAL DITCH EXCAVATION

A. Lateral ditches shall include inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right of way, as shown in the plans. Unless otherwise shown in the plans all excavation in that portion of lateral ditches beyond the limits of the roadway right of way, including the sections where dressing is required as provided in 120-11.1, shall be classified as Lateral Ditch Excavation.

3.0.4. SUBSOIL EXCAVATION

A. Where muck, rock, clay or other material within the limits of the roadway is unsuitable in its original position, the Contractor shall excavate such material to the cross sections shown in the plans or indicated by the Engineer, and shall backfill with suitable material, which shall be shaped to conform to the required cross sections. Where the removal of plastic soils below the finished earthwork grade is required, a construction tolerance from the lines shown in the plans as the removal limits, of plus or minus 0.2 foot in depth and plus or minus six inches (each side) in width will be allowed.

3.0.5. TRENCH EXCAVATION

A. General

1. Design, Provide, and maintain shoring, sheeting and bracing as necessary to support the side of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed work.

B. Trench Excavation Plan: Prepare Trench Excavation Plan addressing the following topics:

1. Details or shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions.

C. Removal of Excavation Support

1. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill.

2. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed work, or adjacent property.

D. Trenches

1. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable state and local construction safety order, and federal requirements.

3.0.6. DEWATERING SYSTEMS

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

3.0.7. STOCKPILING EXCAVATED MATERIAL

C. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed work, if weight of stockpiled material could induce excessive settlement.

H. Disposal of Spoil

3.0.8. DISPOSAL OF SURPLUS AND UNSUITABLE MATERIAL

A. Ownership of Excavated Materials

1. Owner of all suitable excavated material shall remain in the City until the final job requirements for fill or backfill materials have been fulfilled. Unless otherwise provided by the plans or special provisions, any surplus materials then remaining and not needed for job requirements shall become the property of the Contractor and are to be disposed of by him/her, outside the right of way, to the satisfaction of the Engineer.

2. In urban or other areas where temporary storage of apparent excess suitable materials within the right of way may be impracticable, the Contractor may stockpile the materials outside the right of way in areas provided by him/her. Until stock materials are needed in the job or are declared surplus. With the written approval of the Engineer, the Contractor may dispose of such apparent excess

material with the stipulation that he shall replace any portion of the disposed material required to fulfill the actual job requirements, with equally suitable material, at his own expenses.

3. No extra compensation will be allowed for any re-handling involved under the provisions of this Sub-article.

B. General Requirements for Disposal: Excavated muck or other materials unsuitable for the roadway construction shall be disposed of as shown in the plans or, if the plans do not indicate the disposal, the materials shall become the property of the Contractor and shall be disposed of by him/her outside the right of way.

C. Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.2 when approved by the Engineer, in rural undeveloped areas muck (A-8 material) may be placed on the slopes, or may be stored alongside the roadway, provided there shall be a clear distance of at least six feet between the roadway grading limits and the muck, and the muck shall be so dressed as to present a reasonably neat appearance. In addition, disposal of this material by placing on the slopes may also be permitted in developed areas where, in the opinion of the Engineer, this will result in an esthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where muck or other unsuitable material is permitted to be disposed of inside the right of way limits, such material shall not be placed such as to impede the inflow or outfall of any channel or of side ditches. The Engineer shall determine the limits adjacent to channels within which such materials shall no be placed.

D. Disposal of Paving Materials: Unless otherwise indicated in the plans, paving materials excavated in the removal of existing pavements, such as paving brick, asphalt block, concrete slab, lime-rock, sidewalk, curb and gutter, etc., shall become the property of the Contractor and shall be disposed of by him/her outside the right of way. If the materials are to remain the property of the City, they shall be placed in neat piles as directed.

E. Disposal Areas: Where the plans or specifications require the Contractor to dispose of excavated materials outside the right of way, and the disposal area is not indicated in the contract documents, the Contractor shall furnish the disposal area without additional compensation. Areas provided by the Contractor for disposal of removed paving materials shall be out of sight of the project and at least 300 feet from the nearest roadway right of way line of any State-maintained road. The 300-foot limitation will not apply, however, if the materials are buried.

1.0.10 USE OF PUBLIC STREETS

A. Ownership of use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Any earth or other excavated material spilled from trucks shall immediately be removed by the Contractor and the streets cleaned to the satisfaction of the governing authority.

B. The City has not made any attempt to define the equipment to be used in transporting the excavated material since this may vary, however, the Contractor shall abide by the following general requirements:

1. Transport vehicles must be of the type(s) approved for this application by the political jurisdictions involved. General requirements are that the vehicles have watertight bodies that they be properly equipped and fitted with seals and covers to prohibit material spillage or draining, and that they be cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within all legal weight limits and operated safely within all traffic and speed regulations.

2. Access to businesses, schools and homes along the route of the work must be provided by the Contractor at all times.

3. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over.

END OF SECTION

02230 CLEARING AND GRUBBING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Unless otherwise shown in the plans, Standard Clearing and Grubbing shall be done within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right of way ditches, etc.

2. All areas where roadway embankments will be constructed.

3. All areas where structures will be constructed, including pipe culverts and other pipelines.

4. Any other areas specifically called for on the plans to be cleared and grubbed.

1.0.2. DEFINITIONS

A. Clearing shall consist of the cutting, removal and satisfactory disposal of all trees, stumps, brush, shrubs, rubbish and any other objectional material within the designated areas.

B. Grubbing shall consist of the removal and disposal of all stumps larger than 1-1/2 inches in diameter and other objectional material to a depth of at least 12 inches below the ground surface.

1.0.3. QUALITY ASSURANCE

A. In the course of the work, it may become to remove trees if they interfere with the work. Dade County and various municipalities have ordinances regulating the removal, relocation and pruning of trees in the public right-of-way, these ordinances shall be strictly adhered to. The Contractor shall obtain a permit from Dade County and/or other regulatory agencies having jurisdiction over the work area before removing, relocating and/or pruning any tree. The Contractor shall comply with all requirements and conditions of the permit.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. CLEARING AND GRUBBING

A. The Contractor shall remove and replace, where required all existing shrubbery, trees, grass, sprinklers, fences, signs, mailboxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of all excavation necessary for the construction of the project.

B. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges. Where such cutting is for the purpose of pipeline installation, saw cutting shall be either parallel or at right angles with the centerline of the pipe.

C. To protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction, prior to proceeding with any work in the vicinity.

3.0.2. DEPTHS OF REMOVAL OF ROOTS, STUMPS AND OTHER DEBRIS

A. In all areas where excavation is to be done and where the excavated material is to be used in the construction of roadway embankment or roadway base or pavement; also in all areas where roadway embankment will be constructed; roots and other debris shall be removed to a depth of at least one foot below the ground surface. The surface shall then be plowed to a depth of at least six inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the roadway right of way shall be completely removed and disposed of by the Contractor.

B. Where excavation is done within the roadway area and where excavation for structures is done, all roots, etc., protruding trough or appearing on the surface of the completed excavation shall be removed to a depth of at least one foot below the excavation surface.

C. In borrow pits, material pits and lateral ditches, all stumps, roots, etc., protruding through or appearing on the surface of the completed exaction shall be removed or cut off below the finished excavation surface.

D. In borrow and material pits no clearing or grubbing shall be done to within three feet inside the right of way line.

E. Within all other areas where Standard Clearing and Grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be removed to a depth of one foot below the surface, but no plowing and harrowing will be required in these areas.

3.0.3. TREES TO REMAIN

A. As an exception to the above provisions, where so directed by the Engineer, desirable trees within the roadway and project site area shall be trimmed, protected and left

standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give a clear height of 16 feet above the roadway.

3.0.4. BOULDERS

A. Any boulders encountered in the roadway excavation, or found on the surface of the ground, shall be removed and placed in neat piles inside the right of way and adjacent to the right of way line.

3.0.5. SELECTIVE CLEARING AND RUBBING

A. Selective Clearing and Grubbing shall consist of removing and disposing of all vegetation, obstructions, etc., as provided above except that, where the Contractor so elects roots, etc., may be cut off flush with the ground surface. Stumps shall be completely removed and disposed of by the Contractor. Undergrowth shall be entirely removed except in specific areas designated by the Engineer to remain for aesthetic purposes. Desirable trees shall be trimmed, protected and left standing, with the exception of such trees as the Engineer may designate to be removed in order to facilitate right of way maintenance. Undesirable or damage trees (as so designated by the Engineer), shall be removed. Selective Clearing and Grubbing shall be done only in areas so designated in the plans.

3.0.6. PROTECTION OF ADJACENT AREAS

A. The Contractor shall protect areas shown on the drawings or designated by the Engineer of Record to remain protected from damage by construction operations by erecting suitable barriers of other acceptable means.

B. Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced.

3.0.7. DISPOSAL

A. All roots, vegetation and other refuse removed from the site during clearing and/or grubbing operations shall be legally disposed of by the Contractor. Where required, the Contractor shall obtain a permit from Miami-Dade County and/or other regulatory agencies having jurisdiction over the work area before burning any material on the site.

END OF SECTION

02314 EXCAVATION, BACKFILL AND FILL FOR STRUCTURAL FACILITY AND UTILITY SYSTEMS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included under this Section consists of furnishing material and equipment, and performing all labor necessary for excavating, backfilling, filling and compaction of areas to be occupied by facilities or utility systems to be constructed.

B. Plan For Excavation: Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the Engineer of Record for approval. The Contractor shall consider, and his plan for excavation shall reflect, existing utilities that are to remain, the equipment and methods to be employed in the excavation.

1.0.2. QUALITY ASSURANCE

A. All excavations shall conform with South Florida Building Codes, the State of Florida Trench Safety Act, OSHA requirements and the provisions herein. Excavations shall be executed in accordance with all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770) 48 hours prior to any excavation.

B. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami Dade County's Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

C. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required, granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements.

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D4318.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D4318.

3. Not more than 10 percent of weight shall be finer than 74-micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill.

C. Debris, broken paving, or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the City or designee. If sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL

A. Select backfill material specified herein shall meet all the general requirements for backfill material set forth in 2.01, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill material may be material resulting from trench excavation, if suitable in the opinion of the City or designee, carefully selected to comply with these requirements.

1. Trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the Engineer, at his discretion.

2. **Backfilling and compaction shall be kept up with the rate of pipe laying. Backfill consisting of the specified material shall be placed and properly compacted, to the degree specified hereinafter. Unless otherwise ordered or approved by the Engineer, in writing, no temporary fill, refill, or uncompacted fill shall be installed. Under no circumstances shall backfill material other than that specified or an approved equal be installed. Backfill shall be placed and compacted immediately after installation of piping.**

3. Where existing paving is damaged or removed, temporary paving, as specified hereinafter shall be placed the same day as the ditch backfill and compaction and

it shall be replaced with permanent paving within thirty (30) days, to the limits shown in the City's Standard Details or directed by the Engineer.

4. Backfilling and compaction of trenches will not be allowed until the work has been inspected by the Engineer, and the Engineer indicates that backfilling and compaction may proceed. Any work covered up or concealed without the knowledge or consent of the Engineer may be required to be uncovered or exposed at no cost to the City.

5. The Contractor shall backfill and compact all trenches and other excavations made in the process of installing the pipe. The cost of all backfilling and compaction shall be included in the price bid under the various Items. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes. Backfill to a point at least one (1) foot above the pipe shall be select backfill material not exceeding two (2) inches in diameter. Above this point, backfill shall be of material not exceeding six (6) inches in diameter.

6. Backfilling and compacting of material under and around the pipe and to one (1) foot above the crown shall be in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted to at least 98 percent of maximum density as determined by AASHTO Standard No T-180-74, "Moisture-Density Relations of Soils using a 10-lb. (4.54 Kg.) Rammer and an 18 in. (457 mm) Drop." The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Engineer.

7. Backfilling and compacting of material lying above a point one (1) foot above the crown of the pipe and below the pavement base or the surface of the ground if out of pavement shall be accomplished in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180-74 or such greater density as may be required by the governing authority over the area in which the work is performed.

8. A testing laboratory, designated by the City, will make periodic field tests to determine the density being obtained in each lift, or layer, of the backfill. The City will pay the cost for each test that indicates that the density obtained in the backfill meets or exceeds the specified percentage. Contractor shall pay the cost for each test that indicates that the density obtained in the backfill is insufficient and does not meet the specified percentage. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted in a manner approved by the Engineer, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results. The Contractor shall exercise proper care to ensure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the

natural water table if the "Alternate Method of Construction" is utilized. See Section 02220 “Excavation – General”.

9. Backfill and compaction shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed and compacted as soon as practical after the laying of the pipe.

10. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

11. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material at no additional cost to the City.

12. Suitable material in excess of all backfill requirements shall be removed from the work and disposed of by the Contractor. The cost for removal shall be included in the overall Project cost bid.

13. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of 1/2-inch except as otherwise directed by the Engineer. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location. The cost for replacement of gravel or rock stabilized driveways and roadways shall be included in the overall Project cost bid unless a specific Bid Item is established in the Quotation.

14. Backfill material shall consist of the suitable excavated material being stored for this purpose. Backfill material placed within one (1) foot of piping and appurtenances shall not contain any stones or rocks larger than two (2) inches in diameter, and no stones or rocks larger than 6 inches in diameter will be permitted in any backfill. Backfill material containing mangrove muck or other unsuitable materials shall not be used.

15. During the backfilling operation, care shall be taken to preserve the alignment and gradient of the installed pipe.

2.0.3. SUITABLE BACKFILL

A. Suitable backfill material shall be clean and free from all organic material, clay, marl or unstable materials, debris, lumps, broken paving, or other deleterious material. No rocks or stones larger than 3½ inches in diameter shall be allowed in any suitable backfill. Material for backfill may be material resulting from excavation, if suitable in the opinion of the City or designee.

2.0.4. STRUCTURAL FILL

A. Structural fill shall consist of an inorganic, non-plastic, granular soil containing less than 10% material passing the No. 200 mesh sieve (relatively clean sand or crushed limerock with a 2 inches max. particle size) with a Unified Soil Classification of GP, GW, SP, SPGM, SW-SM or SP-SM.

2.0.5. UNSUITABLE FILL AND BACKFILL MATERIAL

A. Unsuitable fill and unsuitable backfill material shall be all material not meeting the definition of Structural Fill, Suitable Backfill, or Select Fill and cannot be amended or blended in the field to meet the standard of one of these fills. Unsuitable Fill material may contain deleterious material including but are not limited to: cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material, organic matter, muck, loose sand, loose free shells, corals or skeletal remain of other marine invertebrates retained on the No. 4 sieve, or water sensitive clay minerals.

2.0.6. BEDDING MATERIAL

A. Bedding may be select backfill material, as specified above, if approved by the City or designee.

B. No. 57 stone may be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details.

C. Sand for bedding shall be dry screened. Sand shall be graded sand with 100% passing a ⅜ inch sieve and not more than 5% passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approved by the City or designee. Existing pipe bedding material may not be used.

2.0.7. NO 57. STONE

G. No 57 stone shall be crushed stone (or drain field limerock). Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines, and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4- inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10

No. 8	0 to 5

2.0.8. BALLAST ROCK

A. Ballast rock shall be composed of hard, durable, sound pieces having a specific gravity of not less than 2.65. It shall be crushed rock conforming to the following gradation:

Sieve size	Percent Finer by Weight
1-½ inch	100
¾ inch	30 to 75
½ inch	15 to 55
¼ inch	0 to 5
No. 8	0 to 5

2.0.9. STEEL – SHEET PILING

A. Steel sheet piling shall conform to the requirements of ASTM A572 "High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality," (AASHTO No. M223) or ASTM A328 "Steel Sheet Piling."

B. The Contractor will be responsible for design and selection. Structural plans for the sheet steel piling installation and the calculations for the required Section Modulus and the Sheet Piling Designation shall be prepared by a registered professional engineer licensed to practice in the State of Florida. Sealed plans shall be submitted to the Engineer for approval prior to installation of the piling system.

C. Structural steel shall meet the requirements of ASTM A36 "Structural Steel."

D. Whenever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures. Shoring system adequately anchored and braced to resist earth on which the support or stability of existing structures is dependent must be left in place at completion of work. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. The Contractor shall remove and replace, where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, guard rails, structures, roadways, sidewalks, curbs and similar items or structures in the way of the main and shall make all excavation necessary for the construction of the main, to the lines and grades shown on the Plans. Weeded areas shall be restored as specified in Section 02900 “Landscaping”, Care of Trees, Shrubs and Grass. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the gravity main. Unless specific bid items are provided in the Quotation form, the cost of removing and replacing any plantings or existing structures shall be included in the

price bid. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Engineer.

B. Clearing: The construction site shall be cleared of all obstructions and vegetation, including large roots and undergrowth, within 5 feet of the lines of excavation, in accordance with Section 02230 "Clearing and Grubbing". All debris created by this clearing operation shall be hauled from the site and disposed of by the Contractor.

1. All cleared materials shall be promptly removed from the work area and disposed of in an area provided by the Contractor, at no additional cost to the City. Accumulation of debris or stockpiling along the route of the work will not be allowed.

C. Removals: Complete all removals within the lines of excavation prior to beginning excavation. Where required, all existing shrubbery, trees, grass, sprinklers, fences signs, mailboxes, structures, sidewalks, curbs, utility poles, or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depths shown on the approved plans, but in all cases as required for construction, and as specified herein. All excavations shall be made by open cut. All existing utilities such as pipes, poles, and structures shall be carefully located, supported, and protected from injury; in case of damage, they shall be restored at the Contractor's expense.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. For structures, the Contractor shall maintain the bottom of the excavation firm and dry and maintain an elevation of the water one (1) foot below the concrete to be placed, by use of pumps, tremie or other acceptable method.

D. Pipe trench excavation shall be in accordance with the appropriate Standard Detail in the Miami-Dade County Public Works Manual

E. The Contractor shall excavate pipe trenches to a minimum of 6 inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

F. Not more than 100 feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Engineer.

G. If, in the opinion of the Engineer, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required. The cost of this extra excavation, and backfilling with select backfill material, shall be included in the price for pipe laying and no additional payment will be made for this work.

H. If the soil is still unsuitable after the additional excavation as prescribed above, and the Engineer authorizes "Overcut," the trench bottom shall be excavated further in one (1) foot increments and paid for as "Trench Overcut." See below 3.0.6. "Trench Overcut.

I. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12 inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6 inch clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

   For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

J. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable Local, State, and Federal requirements.

K. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material.

L. In areas where trench widths are not limited by site constraints the trench sides may be sloped to a stable angle of repose of the excavated material but only from a point one foot above the crown of the pipe. A substantially and safely constructed movable shield, "box" or "mule" may be used in place of sheeting when the trench is opened

immediately ahead of the shield and closed immediately behind the shield as pipe laying proceeds inside the shield.

M. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

N. Excavated material shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

O. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Suitable material in excess of backfill requirements shall be used on the site as directed by the City or designee, or removed at the Contractor's expense. Any pockets of organic matter, concrete or other unsuitable material encountered in excavating shall be removed and replaced with material satisfactory to the City.

P. The excavation of walls for forms will not be permitted.

Q. The trench wall shall be kept at a stable angle of repose to maintain trench widths within the limits hereinafter specified or shown on the Plans.

R. The trench, when in rock, shall be excavated to a width within the limits of the top of the pipe and the trench bottom so as to provide a clearance on each side of the pipe barrel, measured to the face of the excavation, of 12 inches. Rock or removal in the excavation shall be considered a part of the excavation and as such no additional payment shall be made therefore. Where excavation is in silt, the width of trench bottom shall be pipe O.D. plus two (2) feet with the trench walls being kept at a stable angle of repose. All pipe trenches shall be excavated to a level at least 12 inches below the outside bottom of the proposed pipe barrel.

S. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

T. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

U. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting when the trench is opened immediately behind the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe and backfilling and compaction.

V. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Plans, or as directed by the Engineer. All excavations shall be made by open cut. Any existing utilities such as pipes, cables, etc., shall be carefully supported and protected from damage, and in case of damage, they shall be restored at no cost to the City.

W. Excavation for other piping and appurtenances shall be sufficient to leave at least 12 inches clear between their outer surfaces and the embankment or sheeting that may be used to protect them.

X. Provide excavation support as necessary to support sides of excavations and prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work.

Y. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed Work, or adjacent property.

Z. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks and they shall not be placed on private property. In congested areas, such materials as cannot be stored adjacent to the trench or used immediately as backfill shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, in the opinion of the Engineer, it shall be removed immediately by the Contractor to a storage area.

AA. The Contractor shall temporarily store excavated material suitable for backfill in full compliance with the provisions of the permits. All mud, silt, debris and other material unsuitable for backfilling the trench shall be removed and legally disposed of offsite by the Contractor. The Contractor shall make his own arrangements regarding stock piling of excavated suitable material and storage and assembly space to properly and safely carry out the construction. Any agreements entered into by the Contractor and property owners shall hold the City harmless. Storage of excavated material shall not cause environmental problems and shall be performed at no additional cost to the City.

BB. Excavation for structures:

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the depths and dimensions shown on the plans, but in all cases as necessary for satisfactory installation.

2. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall, in general, be either parallel or at right angles.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists

prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

4. Where interlocking steel sheeting is used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below the level be left in place.

5. Excavation for manholes and other piping appurtenances shall be sufficient to leave at least two (2) feet clear between their outer surfaces and the embankment or sheeting.

6. If, in the opinion of the Engineer of Record or the City, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the City that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired.

8. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

9. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

3.0.3. TRENCH STABILIZATION

A. No claim for extras or additional payment will be considered for cost incurred in the stabilization of trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, or other causes. In no event shall pipe be installed when such conditions exist and the Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation at no additional cost to the City.

3.0.4. SHEETING AND SHORING

A. Contractor shall be solely responsible for the design, installation, and maintenance of shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work. Design of shoring or other excavation support shall be provided by a Professional Engineer licensed in the State of Florida. Prior to trench excavation, a Trench Excavation Plan shall be prepared and shall address the following topics.

1. Details of shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions

B. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

C. For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

D. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

E. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut of at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

F. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

G. In areas where trench widths are not limited by right-of-way and/or easement widths, property line restrictions, existing adjacent improvements, including pavements, structures and other utilities, and maintenance of traffic, the trench sides may be

sloped to a suitable angle of repose of the excavated material, but only from a point one (1) foot above the crown of the pipe.

3.0.5. MOVABLE SHIELD (MULE)

A. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting except where it is specifically called out on the Plans or in the Specifications to install sheeting. When using a shield, the trench is opened immediately ahead of the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe, and backfilling and compaction. When a moveable shield or box is used, the installed pipe shall be secured to prevent it from moving when the box is moved.

3.0.6. TRENCH OVERCUT

A. Trench overcut provisions herein shall be used only under direct authorization by the Engineer.

B. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, and the Engineer authorizes overcut, the pipe trench shall be excavated further in one (1) foot increments until either a suitable foundation material is found, or the Contractor is directed by the Engineer to stop trench overcut operation and begin backfilling. In no case will trench overcut be more than 6 feet in depth, i.e., to a point 8 feet 6 inches below the bottom of the pipe.

C. Selected backfill, as defined in 2.0.1. “Materials” shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.7. DEWATERING

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

C. As per the Class V permit requirements to be secured by the Contractor, he/she is responsible for the transportation to, and safe disposal of, potentially contaminated groundwater as a result of the dewatering efforts. The safe disposal shall be made in accordance with local, State, and Federal regulations.

3.0.8. TRENCH RESTORATION

A. Trench restoration shall be per the applicable of Miami-Dade County Standard Details.

B. Mill and resurface minimum 1 inch in accordance with the restoration limits in Part 1 or as directed by the City of Opa-Locka Public Works Department. Prior to placing pavement, City Public Works inspection is required. If milled section crosses a pedestrian path or temporary pedestrian path/detour, an asphalt apron must be provided at transitions with all adjacent surfaces within the pedestrian crossing.

C. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½ inch, except as otherwise directed by the City or designee. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

3.0.9. TEMPORARY PAVEMENT

A. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City or designee, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with This excavation Work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City of Opa-Locka Public Works Department to allow lengths greater than 1,200 feet. At the sole discretion of the City of Opa-Locka Public Works Department, the allowable limits in the permit may be reduced due to unforeseen right-of-way conditions.

C. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City or designee until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all Work shall be completed in sections compatible with specified traffic maintenance procedures.

D. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed

over properly compacted limerock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of paving restoration.

E. Sand seal on the limerock base course will not be permitted in lieu of temporary paving.

F. Unless otherwise approved by the City or designee, temporary paving shall be placed within twenty-four (24) hours following the completion of backfilling.

G. If temporary asphalt is utilized, it shall be removed prior to placement of final asphalt surface.

H. Temporary restoration requires field approval by City of Opa-Locka Public Works Department Field Inspector

3.0.10. STOCKPILED MATERIALS

A. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

B. Material suitable for backfill and not needed for backfill at the structure shall be stockpiled and later moved where needed.

C. Materials shall be stored and in such a manner that will not interfere unduly with City operations, traffic at the site, traffic on public roadways, or sidewalks and shall not be placed on private property. In congested areas, such materials that cannot be stored adjacent to the trench or used immediately as backfill shall be removed to other convenient places of storage acceptable to the City or designee at the Contractor's expense.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved Work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed Work if weight of stockpiled material could induce excessive settlement.

H. Do not place stockpiles within 50 feet of inlets, streams, wetlands, bodies of water, etc. unless permitted by the City or designee.

I. Stockpile side slopes shall be no steeper than 3 horizontal : 1 vertical unless approved by the City or designee. Top of stockpile shall have a minimum slope of no less than 5% to promote positive drainage.

J. Provide perimeter erosion control measures around stockpiles, located no closer than 5- feet from toe of slope, and stabilized stockpile surface with temporary seeding or other measures if stockpile will remain inactive for more than seven (7) days.

3.0.11. BACKFILL

A. Place and compact granular bedding and fill over pipelines and conduits. Density tests for determination of the specified compaction shall be made by a testing laboratory approved by the City or designee. Testing of compacted fill materials is required in accordance with these Specifications. If results of tests taken during the progress of the Work indicate compacted materials do not meet specified requirements, such defective Work will be removed, replaced, and re-tested as directed by the City or designee and at the Contractor's sole expense. Compacted fill is to be tested before proceeding with the placement of surface materials.

B. Backfilling of pipe trenches will not be allowed until the Work has been approved by the City or designee, pressure tested if required, and the City or designee indicates that backfilling may proceed. Any Work which is covered or concealed without the knowledge and consent of the City or designee shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the City or designee.

C. The Contractor shall backfill all trenches and other excavations made in the process of installing the culvert. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes.

D. The Contractor shall maintain trenches free of debris, wood, rocks over 2 inches in diameter, and water.

E. Backfill shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after laying the pipe. On parts of the line where the groundwater level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

F. Pipe bedding and backfill shall be in accordance with the applicable Miami-Dade County Standard Details. Material shall be placed in maximum 6-inch layers. Each layer shall be thoroughly compacted to at least 98% of maximum density as defined by AASHTO Specifications T-180. The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results meet the requirements and are approved by the City or designee. Care shall be taken to preserve the alignment and gradient of the installed pipes.

G. A testing laboratory will make periodic field tests to determine the density being obtained in each lift of backfill. Testing shall be performed at a minimum frequency of one test every 10 feet. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting, and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

H. The Contractor shall exercise proper care to ensure no pipe will be broken or displaced by use of mechanical compacting equipment. Water shall be added as required to obtain optimum moisture content to facilitate compaction but ponding or inundation of backfill will not be permitted.

I. In the event sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

3.0.12. ALTERNATE METHOD OF CONSTRUCTION

A. A combination of conditions in the substrata, water table, method of disposal or regulatory agency requirements may be encountered during the course of the work which makes dewatering impossible, or possible only through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor may request permission to employ the following Alternate Method of Construction. The concurrence of the Engineer shall be obtained in writing and shall limit the use of the Alternate Method of Construction to such specific portions of the work as the Engineer shall determine.

B. The requirements set forth in other Sections of these Specifications shall establish the required standards of construction quality for this work. Use of the Alternate Method of Construction described hereinafter shall in no way be construed as relieving the Contractor of his basic responsibility for satisfactory completion of the work.

C. Under no conditions will any additional or increased payments be made to the Contractor for excavation, backfill, sheeting or any cost incurred for work or materials, or any other costs incurred as a result of the use of this alternate method of construction. The unit prices established in the Quotation shall be full payment for the various items of work.

D. Subject to all of the requirements stated herein, including written approval of the Engineer, construction will be permitted in accordance with the following specifications. All requirements of these Specifications shall apply to this construction unless otherwise specifically modified herein.

1. Removal of Water: The installation of pipe and appurtenances under water will be permitted and the dry-trench requirements of Section 6.06 "Removal of Water" will be waived.

2. Excavation: Excavation shall be performed in accordance with 3.0.2. "Excavation."

3. Pipe Bedding:

   a. Pipe bedding shall be placed from 6 inches below the outside bottom of the proposed pipe barrel up to the level of the lower one-third of the pipe barrel for pressure mains.

   b. The bedding material shall be pea rock, or drainfield limerock. Limerock screenings, sand or other fine organic material shall not be used.

   c. The bedding material shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fittings.

4. Backfill:

   b. After the pipe is installed, backfilling shall proceed in accordance with the provisions of 2.0.1. “Materials”

   c. Select backfill material shall be used to backfill around the pipe and to a level one (1) foot above the crown of the pipe.

   d. Under no circumstances will material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

E. If the Alternate Method of Construction is used, all backfill material, including specified pipe bedding material, shall be carefully lifted into the trench and not released to fall freely therein until the bucket or container is at or just above water level. Under no circumstances will backfill material be dumped or pushed into trenches containing water. Below existing water level, and to a point not more than 18 inches above the water level the backfill material shall be carefully placed in uniform layers, of equal depth on each side of the pipe. From a point not more than 18 inches above the water level, and below the pavement base or the surface of the ground, if out of paved areas, backfill material shall be placed and compacted for normal backfilling as provided in 2.0.1. “Materials” for compacted backfill.

END OF SECTION

02315 TRENCHING AND BACKFILLING FOR PIPING SYSTEMS

PART 1 – GENERAL

1.0.1. WORK INCLUDED

A. The work included under this Section consists of excavating, backfilling and compaction as required for the construction of the piping systems as specified herein. (See Section 02314 for excavation for structures.)

B. All excavations shall be executed in accordance with the South Florida Building Codes, the State of Florida Trench Safety Act (TSA), OSHA requirements and all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770), 48 hours prior to any excavation.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required (See Section 02745), granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements:

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D 423.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D 424.

3. Not more than 10 percent of weight shall be finer than 74 micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill. Backfill material placed to a point at least one foot (1 ft.) above pipe and appurtenances shall be select backfill material not exceeding 2-inches in diameter. For PVC gravity sewers backfill material placed at least two feet (2 ft.) above pipe shall be select backfill material not exceeding 2-inches in diameter. In any case, above this point, but up to the upper 6-inches of the trench, backfill shall be of material not exceeding 6-inches in diameter.

C. Debris, broken paving or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the Department. If

sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL MATERIAL

Select backfill material specified in these specifications or required by the Plans shall meet all the general requirements for backfill material set forth above, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill for copper tubing shall be limerock screenings or sand. Select backfill material may be material resulting from excavation, if suitable in the opinion of the Department, carefully selected to comply with these requirements.

2.0.3. BEDDING MATERIAL

Pipe bedding material shall consist of one of the following types of material, and accordance with the Department's Standard Details: (See Section UC-300 for Gravity Sewer Piping Foundations)

A. Bedding may be select backfill material, as specified above, if approved by the Department.

B. Crushed stone (or drainfield limerock) shall be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details. Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4-inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10
No. 8	0 to 5

C. Sand for bedding copper pipe shall be a dry screened sand. Sand shall be graded sand with 100 percent passing a 3/8-inch sieve and not more than 5 percent passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approve by the Department. Existing pipe bedding material may not be used.

2.0.4. BACKFILL UNDER MANHOLES AND METER VAULTS

Any excavation below the levels required for the proper construction of manholes or meter vaults shall be filled with Class C concrete. The use of earth, rock, sand or other materials for this purpose will not be permitted. (See Section 02314 for excavation for structures.)

PART 3 – EXECUTION

3.0.1. CLEARING

A. The Contractor shall perform all clearing necessary for the proper installation of all piping and appurtenances in the locations shown in the Drawings, in accordance with Section 02230, "Clearing and Grubbing".

B. Where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, structures, sidewalks, curbs, utility poles or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Drawings. All excavations shall be made by open cut.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material, but only from a point one foot above the crown of the pipe.

D. A substantially and safely constructed moveable shield or box, as approved by the Engineer of Record, may be used in place of sheeting, except where specifically called for on the Plans to install sheeting. Where a moveable shield or trench box, is used in place of sheeting and shoring, the trench shall be opened immediately ahead of the shield as pipe laying proceeds inside the shield.

E. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

F. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

G. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Material unsuitable for use in backfill shall be removed promptly and disposed of by the Contractor

H. Excavation for Pipes and Piping Appurtenances (See Section UC-300 for additional requirements for gravity sewer piping):

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the lines and grades shown on the Plans.

2. Where pavements or sidewalks are cut they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the pipe.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Department.
4.
5. Excavate pipe trenches to a minimum of 6-inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

6. If, in the opinion of the Department, the soil at that depth is unsatisfactory as foundation material because it contains unsuitable marl, muck, organic matter, or other unsuitable material, the excavation shall be continued 2 feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. If the soil is still unsuitable after the additional excavation as prescribed above, the trench bottom shall be excavated further in one foot increments in accordance with "Trench Overcut", below.

8. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

9. Where wood sheeting or certain designs of steel sheeting are used, the Department may require the sheeting to be cut off at a level 2-feet above the top of the installed pipe and that portion below that level shall be left in place.

10. If interlocking steel sheeting is used, the Department may permit its complete removal in lieu of cut-off, providing removal can be accomplished without disturbing the bedding, pipe or alignment of the pipe. Any damage to the pipe bedding, pipe or alignment of the constructed utility caused by removal of sheeting shall be cause for rejection of the affected portion of the work. Not more than 100-feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Department.

11. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

12. Excavation for appurtenances, such as manholes and valves, shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation or sheeting, if used, of not less than 12-inches. Manhole excavations shall be carried to sufficient depth to permit their construction on the undisturbed bottom of the excavation.

13. Excavation for thrust block shall be made in such a manner so that, when concrete is placed, it will bear against a firm, undisturbed, vertical trench wall with bearing are in accordance with the schedule shown in the Standard Details.

14. Selected backfill shall then be placed and compacted in 6-inch layers up to the level of the pipe bedding material.

15. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the Department that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired. The decision of the Department in this regard shall be final.

16. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

17. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

I. <u>Excavation for PVC Gravity Sewers and Service Laterals:</u>

1. The Contractor shall make all excavations necessary for the construction of the gravity sewers and service laterals to the lines and grades shown on the Plans, and in accordance with the Standard Details.

2. In stable soils, trench widths when measured to a point 12 inches above the top of the pipe shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench widths under the same conditions shall be 6-inches on each side for the pipe for 4-inch and 6- inch pipe, and 9-inches on each side of the pipe for 8-inch pipe and larger. Minimum trench widths are required to provide room for a man to place and compact the haunching and initial backfill material. Embedment material shall be Class I. (See Section UC-300)

3. In unstable soils (defined as peat, much or other organic soils, elastic silts and clays below the water table, and fine sands below the water level), trench widths when measured at a point 12-inches above the top of the pipe shall be a minimum of five (5) nominal pipe diameter in width. Slightly greater width are at the Contractor's option in order to accommodate his trenching equipment, but the pipe bedding material shall extend to the face of the excavation, or sheeting if used. Embedment material shall be Class II. (See Section UC-300)

3.0.3. TRENCH STABILIZATION

Trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes, shall be stabilized. In no event shall pipe be installed when such conditions exist. The Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation.

3.0.4. TRENCH OVERCUT

A. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the pipe trench shall be excavated further in one-foot depth increments until a suitable foundation material is found. As a point of reference, it has been the Department's experience that, typically, trench overcut does not extend to depths more than 6 feet. However, the Department reserves the right to require trench overcut to depths up to 6 feet, i.e., to a point 8.5 feet below the bottom of the pipe.

B. Select backfill, as defined above, shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.5. REMOVAL OF WATER

A. It is a basic requirement of these Specifications that excavation shall be free from water before pipe or structures are installed. However, it is realized that in certain sections

of the work this cannot be accomplished economically and the Contractor may request permission to use the "Alternate Method of Construction" defined below.

B. The Contractor shall provide all necessary pumps, underdrains, well point systems, and other means for removing water from trenches and other parts of the work including structures. The Contractor shall continue dewatering operations until the backfill has progressed to a sufficient height over the pipe to prevent flotation or movement of the pipe in the trench, so that the backfill is above the natural water level.

C. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-away or into any existing drainage structure or facility.

D. Water from the trenches and excavation shall be disposed of in such a manner as will not cause injury to public health, to public or private property, to the work completed or in progress, to the surface of the streets, or to cause interference with the use of the same by public. Submit the proposed method of handling and disposal of trench waster for approval before starting the excavation.

E. The Contractor is cautioned that Dade County or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting, or limiting, the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. Obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way, or into any existing drainage structure or facility.

F. Pumps and engines for dewatering systems shall be operated with mufflers and a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

3.0.6. INSTALLATION OF BACKFILL

A. Backfilling of pipe trenches will not be allowed until the work has been approved by the Department, pressure tested if required, and the Department indicates that backfilling may proceed. Any work which is covered or concealed without the knowledge and consent of the Department shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the Department.

B. The Contractor shall backfill all trenches and other excavations made in the process of installing the pipe. He shall maintain the surface of the backfill free from major irregularities and potholes.

C. Select backfill material shall be placed under and around the pipe to one foot above the crown (or to two feet above crown for PVC gravity sewers) in 6-inch layers. Each

layer shall be thoroughly compacted to at least 90 percent of maximum density as defined by AASHTO Standard No. T-180, "Moisture-Density Relations of Soils using a 10-lb. (4.54 kg.) Rammer and an 18-in. (457 mm) Drop". The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Department. Particular attention and care shall be exercised in obtaining thorough support for the branch of all service connection fittings. Care shall be taken to preserve the alignment and gradient of the installed pipe.

D. Backfilling and compacting of material lying above a point one foot (or two feet for PVC pipe), above the crown of the pipe and below the pavement base or the surface of the ground, if out of pavement, shall be accomplished in layers not exceeding 9 inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180 or such greater density as may be required by the governing authority over the area in which the work is performed. A testing laboratory will make periodic field tests to determine the density being obtained in each lift, or layer, or the backfill. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

E. The Contractor shall exercise proper care to insure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the natural water table if the "Alternate Method of Construction" is utilized.

F. Backfill shall in general be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after the laying of the pipe. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

G. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

H. Suitable material in excess of all backfill requirements and all unsuitable material shall be removed from the work and disposed of by the Contractor.

I. Within paved areas of trench excavation, the base and surfacing shall be reconstructed as specified under Section 02745, "Pavement Removal and Replacement".

J. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½-inch, except as otherwise directed by the Department. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

K. Backfill for Structures: See Section 02314.

3.0.7. COMPACTION AND DENSITIES

A. Methods of control and testing of backfill construction to be employed in this work are:

1. Maximum density of the material in trenches shall be determined by AASHTO Designation T 180.

2. Field density of the backfill material in place shall be determined by AASHTO Designation T 238.

B. Laboratory and field density tests are necessary to establish compliance with the compaction requirements of these specifications. The Department will not accept projects for which successful laboratory and field density test results are submitted. Tests will be made at depths and locations to the satisfaction of the Department.

C. Trench backfill which does not comply with the specified densities, as indicated by such tests, shall be reworked and recompacted until the required compaction is secured.

3.0.8. ALTERNATE METHOD OF CONSTRUCTION

A. General:

1. A combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work which make dewatering impossible, or only possible through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor, with the concurrence of the Department may elect to employ the following alternate method of construction. The concurrence of the Department shall be obtained and the Contractor shall limit the use of the alternate method of construction to such specific portions of the work as determined applicable.

2. The requirements set forth in other sections of these Specifications shall establish the required standards of construction quality for this work. Use of the alternate method of construction described hereinafter shall in no way be construed as

relieving the Contractor of his basic responsibility for satisfactory completion of the work.

3. Subject to all of the requirements stated hereinabove, including approval by the Department, construction will be permitted in accordance with the following specifications.

B. Removal of Water: The installation of pipe, manholes and appurtenances under water will be permitted and the dry-trench requirements of "Removal of Water" will be waived.

C. Excavation: Excavation shall be performed in accordance with normal applicable excavation specifications.

D. Pipe Bedding for Ductile Iron and Vitrified Clay Pipe:

1. Pipe bedding shall be placed from 6-inches below the outside bottom of the proposed pipe barrel up to the level of the springline of the pipe barrel of gravity sewers and to the level of the lower one-third of the pipe barrel for force mains or water mains. The bedding material shall be washrock, drainfield limerock or approved material. Limerock screenings, sand or other fine organic material shall not be used.

2. The bedding material used shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting.

E. Bedding for PVC Pipe: The pipe bedding, haunching and initial backfill material shall conform to embedment material listed in Section UC-300 for either stable or unstable soil conditions as required, and shall be placed and compacted in as stated in "Installation of Pipe Bedding", above.

F. Backfill:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill around the pipe and to a level one foot above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all backfill material, shall be carefully lifted into the trench and released to fall freely therein when the bucket or container is near or at a moderate height above water level. Height of release shall be to the satisfaction of the Department. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the

pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities".

G. Backfill for PVC Gravity Sewers:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill to a level two feet above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all embedment and backfill material, shall be carefully lifted into the trench and released to fall freely therein until the bucket or container is at or just above water level. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities

3.0.9. RESTORATION OF EXISTING SURFACES

Paved and grassed areas disturbed by the operations required under this Section shall be restored as indicated on the approved Plans and/or specified herein.

END OF SECTION

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct riprap composed of sand-cement or rubble (consisting of broken stone or broken concrete) as shown in the Standard Plans and in the Plans.

PART 2 – PRODUCTS

3.0.10. FILTER FABRIC

A. Use products listed on the FDOT's APL.

B. Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the City.

C. Place the filter fabric (fabric) at locations as shown in the Plans, in accordance with the manufacturer's directions. Place the fabric on areas with a uniform slope that are reasonably smooth, free from mounds, windrows, and any debris or projections which might damage the fabric.

D. Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers. Repair in accordance with the manufacturer's instructions.

E. The Contractor may sew the seams to reduce overlaps as specified in 985-3. Follow the manufacturer's instructions for all seams and overlaps.

3.0.11. PREPACKAGED SAND-CEMENT BAGS

A. Evenly proportioned sand and cement in the ratio of five cubic feet of sand to 94 pounds of cement. Material proportioned by mass shall use a sand density of 85 pounds per cubic foot.

B. Sealed package of 80 pounds of sand-cement in a bag.

C. Bag made of scrim-reinforced paper capable of holding the sand-cement without leakage.

D. Sand meets requirements of Section 902-3.3

E. Type I/II cement meets requirements of Section 921.

F. Prepackaged Sand-Cement Bags shall be one of the products listed on the FDOT's Approved Product List. Manufacturers seeking evaluation of their product shall submit

an application in accordance with Section 6. Include with the submittal a product data sheet, safety data sheet, product label, and a self-certified statement the product meets the requirements of this Section.

3.0.12. RUBBLE

A. Rubble (Bank and Shore Protection):

1. Provide sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone with a bulk specific gravity of at least 2.20. Ensure that stones are rough and angular.

2. For this application, use broken stone meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
670	290	60	2.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 85% of the material by weight is greater than Weight Minimum pounds.			

B. Rubble (Ditch Lining):

1. Use sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone or broken concrete with a bulk specific gravity of at least 1.90. Ensure that stones or broken concrete are rough and angular.

2. Use broken stone or broken concrete meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
75	30	4	1.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 90% of the material by weight is greater than Weight Minimum pounds.			

C. Physical Requirements of Broken Stone and Broken Concrete:

1. Use broken stone and broken concrete meeting the following physical requirements:

Absorption (FM 1-T 85)	Maximum 5%
Los Angeles Abrasion (ASTM C535)	Maximum loss 45%*
Soundness (Sodium Sulphate) (AASHTO T 104)	Maximum loss 12%** (after five cycles)
Flat and elongated pieces	Materials with least dimension less than one third of greatest dimension not exceeding 10% by weight.
Dirt and Fines	Materials less than 1/2 inch in maximum dimension accumulated from interledge layers, blasting or handling operations not exceeding 5% by weight.
Drop Test***(EM 1110-2-2302)	No new cracks developed, or no existing crack widened additional 0.1 inch, or final largest dimension greater than or equal to 90% original largest dimension of dropped piece.

* Ensure that granite does not have a loss greater than 55% and that broken concrete does not have a loss greater than 45%.

** The Engineer may accept rubble exceeding the soundness loss limitation if performance history shows that the material will be acceptable for the intended use. The Engineer will waive the soundness specification for rubble riprap (broken stone) when project documents indicate it will be placed in or adjacent to water or soil with a sulfate content less than 150 parts per million and a pH greater than 5.0. Soundness is not required for broken concrete.

*** The Engineer will waive the Drop Test unless required to ensure structural integrity. Provide all equipment, labor and testing at no expense to the City. EM refers to the US Army Corps of Engineer's Specification Engineering Method.

PART 3 – EXECUTION

3.0.1. GEOTEXTILE FABRIC

A. Overlap adjacent strips of fabric a minimum of 24 inches, and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.

B. Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.

C. Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.

D. Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

3.0.2 SAND-CEMENT BAGS

A. Place the bags with their ends all in the same direction. Lay the bags with broken joints, in a regular pattern. Ram or pack the bags against each other so as to form a

close and molded contact. Remove and replace bags ripped or torn in placing with sound, unbroken bags. Then, thoroughly saturate all bags with water.

B. Immediately after watering, fill all openings between bags with dry grout composed of one-part Portland cement and five parts sand.

C. Use sand-cement bags for the toe walls if required. Fill the entire trench excavated for the toe walls with sand-cement bags.

3.0.3. RUBBLE

A. Dump rubble in place forming a compact layer conforming to the neat lines and thickness specified in the Plans. Ensure that rubble does not segregate so that smaller pieces evenly fill the voids between the larger pieces.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.3. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.4. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami-Dade County Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.5. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance

with the requirements of the agencies having jurisdiction including but not limited to City of Opa-Locka, and Miami-Dade County.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.10. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.11. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being

compacted. Wetting and drying operations shall involve manipulation of the entire width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts

shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. 310-9.2 Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and

objectionable matter. If deemed necessary, the base shall be lightly sprinkled with water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is

completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the

edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays

experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

H. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

I. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

J. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

K. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

L. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

M. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material

must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

N. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

02505 CLEANING AND TESTING OF MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall clean and test the water main and sewage force main pipe, fittings and valves in accordance with these Specifications and to the satisfaction of the City.

B. The Contractor shall furnish all material, labor and equipment necessary to clean and test the water main and sewage force main pipe, fittings and valves.

C. Pipelines for Potable Water Mains shall be pressure tested for two (2) hours at 100 psi minimum test pressure in accordance with ANSI/AWWA C600 latest revision. No more than 5 psi drop over the duration of the test.

D. Pipelines for Sewage Force mains shall be pressure tested in accordance with AWWA Standard C-600, latest revision and the provisions of the City of Opa-Locka Public Works Manual. The minimum pressure for testing shall be two (2) hours at 100 psi.

E. The Contractor is advised that he is solely responsible for any damage caused to the main or it's lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

F. Potable water mains shall be disinfected and approved for use by the Health Department prior to placing the main in operation.

1.0.2. RELATED SECTION

A. Section 15995 “Disinfection of Water Main”.

1.0.3. QUALITY ASSURANCE

A. Testing shall be in accordance with ANSI/AWWA Standard C-600, latest edition, as modified herein.

B. Cleaning and testing shall be performed in strict accordance with these specifications.

C. The Contractor is cautioned that the City or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting or limiting the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. The Contractor shall comply with all regulations of all governing agencies.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. GENERAL

A. As soon as the installation of each run of main is completed, including valves sufficient for control and anchored sufficiently to withstand any test pressure, the run shall be thoroughly flushed and pigged to remove all foreign matter from pipe in accordance with AWWA C651. The Contractor shall provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent property. Note that in some circumstances it may be necessary to install valves after the line segment has been pigged. In such in instance, permission to use this sequence of operations must be approved in writing by the City.

B. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections.

C. Flush pipe through flushing branches and remove branches after flushing is completed.

D. Operate new valves during flushing process at least twice during each flush.

E. The Contractor shall clean the inside of the main in intervals during its installation. The Contractor shall utilize pigging to clean the main unless otherwise specified herein or instructed by the City. A Bare Swab No. 5, density 1 lb./ft.3 by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal, shall be utilized for this work. Any damage to the pipe lining caused by pigging shall be repaired or replaced to the satisfaction of the City at the Contractor's sole expense. The Contractor shall furnish all materials and equipment necessary to clean the mains.

F. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

G. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City.

H. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

I. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet. Where a segment is being tested which includes more than one line valve to line valve section the maximum allowable leakage, defined below, shall be based on the length of the small segment being tested. All offset connections, fire hydrants, fire hydrant branch mains, and services between line valves shall be tested with the water main.

3.0.2. WATER FOR CLEANING AND TESTING

A. Water for cleaning and testing shall be furnished as specified in "Water Used in Construction" of Section 01100 "Special Project Requirements". The Contractor shall

furnish and install all necessary pumps, piping and fittings, including the corporation stop(s), to connect the section under test to the source of water. The test pump shall be a centrifugal or gear pump producing a steady pressure free of pulsation. If a construction meter is not furnished by the City, a meter or container, calibrated to the satisfaction of the City shall be provided by the Contractor. A Contractor-supplied meter or container must be approved in writing by the City. The test pressure shall be 100 psi and, as specified in AWWA C600, Section 5.2 "Hydrostatic Testing", shall not vary more than ± 5 psi for the duration of the testing.

3.0.3. CLEANING

A. Unless otherwise approved by the Engineer, ductile iron pipe water mains and sewage force mains shall be cleaned at intervals not to exceed 30 lengths of pipe.

B. Unless otherwise ordered by the Engineer, cleaning shall be by pigging for lines of 36-inch nominal diameter and below. Lines of larger size are anticipated as being cleaned directly by construction personnel as the installation progresses. For all lines of nominal diameter greater than 24-inches the Contractor shall furnish for approval by the City a written shop drawing and procedure submittal detailing materials and methods to be used in the cleaning operation. This submittal shall be made in timely fashion so as not to delay construction and to permit sufficient time for review. If said submission is not approved, the Contractor shall immediately make such changes as are directed by the City and resubmit.

C. Prior to cleaning operations, the Contractor shall in writing, notify the City of the make, model and characteristics of the pig to be used. This description shall be sufficient to fully identify and describe the pig to be used. If the pig has not been previously approved for this use by the City, the submittal shall be a formal shop drawing and be accompanied by a letter from the manufacturer stating that the pig is designed to be used with lined pipe and will not, if properly applied, abrade or damage the lining.

D. All cleaning methods used by the Contractor shall be subject to approval by the Engineer, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

E. As soon as the installation of each run of pipe is completed, and prior to installation of valves on the main in positions which would interfere with or be damaged by the cleaning operation, the line shall be cleaned by use of a pig with characteristics as specified herein. The pig shall be driven through the line by water pressure and no cables, push rods or other mechanisms that might damage the pipe or lining shall be utilized in this operation.

F. Thorough pigging will be required, and operations shall be sufficient to remove all deleterious materials left in the pipe by construction and shall meet the Engineer's approval. If required by the City, pigging operations shall be scheduled to allow observation by the City and no extra compensation will be allowed for such scheduling.

G. The Contractor shall furnish, install and remove all piping necessary to carry out pigging operations, dispose of water and debris from the operation, and shall exercise care to prevent any damage to the surrounding area and adjoining or adjacent

properties. The Contractor shall furnish either a new or in new condition pig for cleaning operations and the City reserves the right to reject the pig and require provision by the Contractor of a new replacement at no extra charge to the City.

H. After the main has been cleaned to the satisfaction of the Engineer, any valves which could not be placed prior to pigging operations shall be installed using care to prevent entrance of deleterious materials into the cleaned main or valve body. Thereafter, the main shall be tested as specified below unless otherwise ordered or permitted by the Engineer.

I. The dirty water removed from the mains shall be disposed of by pumping out or ahead into the trench, or other approved location, and the Contractor shall exercise care to prevent any damage to the surrounding area and adjacent properties.

J. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

K. The Contractor is required to install nightcaps, plugs or other devices acceptable to the Engineer at the open ends of the pipe installation at the end the work day. This requirement shall apply to installations both above and below the water table.

L. The Contractor is advised that he is solely responsible for any damage caused to the main or its lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

M. The pig for cleaning shall be a Bare Swab No. 5B; density, 1 lb./ft.^{3} by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal.

3.0.4. TESTING OF MAINS

A. Testing of ductile iron pipe for water mains and sewage force mains shall be in accordance with ANSI/AWWA C600, "Installation of Ductile-Iron Mains and Their Appurtenances" Section 5.2 Hydrostatic Testing, latest edition, as modified herein.

B. Pipelines for potable water mains shall be pressure tested at 120 psi for a minimum of two (2) hours in accordance with ANSI/AWWA C600 latest revision. The City may, at its option, allow for a 100 psi pressure test based on the plan design, condition of the existing system or material limitation. No more than 5 psi drop over the duration of the test. Final approval will be based on leakage test results. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any isolated section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

C. All fire hydrants, corporation stops, air release valves, flushing valves, and meter valves in the section being tested shall be opened and left open until water comes out of them, in order to remove as much air as possible from the line.

D. The Contractor shall furnish and install all necessary pumps, piping and fittings, including the corporation stops, to connect the section under test to the source of water. The test pump shall be centrifugal or gear pump producing a steady pressure free of pulsation. The test pressure shall be maintained throughout the duration of the test. Unless otherwise permitted by the Engineer, no static testing will be allowed.

E. During the hydrostatic test, the Contractor shall use a calibrated meter or other device to accurately measure the quantity of water necessary to maintain the test pressure on the gauge.

F. Water shall be pumped into the line through the meter up to the required pressure, and pumping shall be continued to maintain that pressure for a period of two (2) hours, or such longer period as the Inspector requires to inspect the line for leaks. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

G. Since the allowable leakage is defined in gallons per hour, testing shall be conducted in, at a minimum, two (2) independent one (1) hour test periods.

H. Testing shall continue for additional one (1) hour periods if the leakage increases during a previous to a subsequent test period, even if the leakage is within the allowable amount, until the leakage stabilizes or decreases.

I. The maximum allowable leakage for water mains and sewage force mains shall be determined by the following formula from the ANSI/AWWA C600:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: L = allowable leakage in gallons per hour
S = length of pipeline tested in feet
D = nominal diameter of the pipe in inches
P = average test pressure during the leakage test, in pounds per square inch gage

No pipe installation will be accepted if the leakage is greater than that determined by the above requirements. The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his/her representative.

J. The Contractor shall locate and repair all leaks until the leakage is reduced to the limits specified. The Contractor may use the leak detector belonging to the City but shall reimburse the City for the actual cost of the operation of the instrument by City personnel. Any observed leaks or any obviously defective joints or pipes shall be repaired or replaced as directed by the Engineer, even though the total leakage is below that specified above.

K. The tests and repairs shall be continued or repeated until the Engineer is assured that the leakage from the section of line under test is less than the amount specified.

L. Testing of Connections:

4. Cut-in connections shall be pressure tested whenever possible. Cut-in connections that cannot be pressure tested shall be done under the supervision of City forces with a visual system pressure test to verify no leakage is present. Any system pressure test shall be pre-approved by the Engineer.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.2. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.3. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.4. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance with the requirements of the agencies having jurisdiction including but not limited to

City of Opa-Locka, Miami-Dade County, and FDOT.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.2. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

   1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. Wetting and drying operations shall involve manipulation of the entire

width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt

concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any

delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and objectionable matter. If deemed necessary, the base shall be lightly sprinkled with

water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the

manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or

emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving

operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was

installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Concrete pavement, curbs and sidewalk shall be constructed to the lines and grades and dimensions required for a complete installation as shown on the drawings and specified herein.

1.0.2. SUBMITTALS

A. Shop drawings for reinforcing, joint material and mix designs shall be submitted for review in accordance with the Section 01300 “Submittals”.

PART 2 – PRODUCTS

2.0.2. MATERIALS

A. All roadways are to be de-mucked or stabilized with geotextile material in accordance with the geotechnical report and City requirements.

B. Laboratory analysis shall be complete, and the material approved by the Engineer prior to placement.

B. Geotextile material: Woven fabric to be structurally prepared and placed as per manufactures written specification.

C. Sub-grade: limited to maximum six (6”) diameter clean non deleterious material Sub grade to be proof-rolled. Subgrade material supporting the roadway and shoulders shall have a minimum lime rock bearing (LBR) of 40. The stabilized subgrade shall be twelve (12) inches compacted to 98% of maximum dry density as per AASHTO-T-180.

D. Lime rock: The material used in lime rock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor’s option having a minimum percentage of calcium or magnesium of 60; however, only one formation may be used on any contract. Lime rock base course shall have a minimum bearing ratio (LBR) of 100 and shall be minimum of eight (8) inches thick. Base material shall be compacted to a density of not less than 98% of maximum dry density as determined by AASHTO-T180 under all paved areas.

1. Composition:

a. The lime rock material shall contain not more that 0.5 percent of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

b. Lime rock material shall contain not less than 70 percent of carbonates of calcium and magnesium. The maximum percentage of water sensitive clay material shall be three (3).

2. Gradation: At least 97 percent (by weight) of the material shall pass a 3 1/2-inch sieve and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

3. Quality:

   a. The lime rock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces or lumps, balls or pockets of sand or clay size material in sufficient as to be detrimental to prevent proper bonding, finishing or strength of the lime rock base. Lime rock material shall be nonplastic, and the liquid limit shall not exceed 35.

   b. Lime rock material shall have an average LBR value of not less than 100.

E. Sidewalks:

1. The replacement of gray concrete sidewalks throughout the City shall be with the Miami-Dade County's sidewalk color standard, unless otherwise specified by any applicable City land use board, in accordance with Resolution 2019-30800.

2. The Public Works Director has the authority to determine on a street-by-street basis if replacement of sidewalks to Miami-Dade County's sidewalk color standard is appropriate.

2.0.1. CONCRETE

A. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this section suitable to the specific conditions of placement.

B. Cement:

1. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

2. Only one brand of cement shall be used in any individual structure unless approved by the Engineer. Cement which has become damaged, partially set, and lumpy or caked shall not be used the entire contents of the sack or container which contains such cement will be rejected. No salvage or reclaimed cement shall be used.

3. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

4. Slump shall not exceed six inches (6”).

5. Concrete for underground work shall be acid resistant cement and shall maintain a minimum compressive strength of 4000 psi in 28 days.

6. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

7. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

8. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected. The Contractor shall provide suitable means for storing and protecting the cement against dampness. Bags of cement which for any reason may become partially set, or which contain lumps of caked cement, shall be rejected. In no instance shall any portion of a bag of damaged cement, or a bag containing lumps of caked cement, be used. Cement salvaged from discarded or used sacks shall not be used. Different brands of cement, even if tested and approved, shall not be mixed during use, nor used alternately in any section of the work without written permission of the Engineer.

C. Aggregates:

1. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

2. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

3. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

4. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

5. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0. F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

6. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions

D. Water: Water shall be taken from a potable water supply and shall be fresh, clean and free from injurious amounts of oil, acid, alkali or organic matter.

E. Admixtures:

1. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

2. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

   a. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

   b. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day’s operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are “Eucon 37” or Plastol 5000 by the Euclid Chemical Company, “Master Rheobuild 1000 or Master Glenium Series” by BASF, and “Daracem 100 or Advaflow Series” by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

   c. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year’s duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are “Accelguard 80/90 or NCA” by the Euclid Chemical Company and “Daraset” by W.R. Grace.

d. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

3. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

F. Membrane Curing Compound: Membrane curing compound shall conform to the requirements of AASHTO Designation M 148, Type 1-clear, or type 2-white pigmented.

G. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the nonextruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

H. Reinforcing and Welded Wire Fabric: Reinforcing and welded wire fabric shall be 6"X6" – 10/10 steel bars to be used in curb & gutter and wire mesh in sidewalk.

2.0.2. CONCRETE PAVERS

A. Concrete pavers shall Miami-Dade County's color standard approved equal. Use of other colors to complement project design theme and/or match existing pavers' configuration require shall only be used with written approval from the City of Opa-Locka Beach Public Works Department.

B. All concrete pavers shall have a skid resistant finish.

C. Provide products supplied by a member of the Interlocking Concrete Pavement Institute (ICPI) as called for in the Drawings and/or as specified herein.

D. Concrete pavers shall conform to the requirements of ASTM C936.

E. Concrete pavers shall have an average compressive strength of 8,000 psi with no individual unit under 7,200 psi.

F. Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C140.

2.0.3. TEXTURED PAVEMENT

A. “Street Bond SP150E Coating Material” refers to a high performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by Integrated Paving Concept, Inc. (Tel. 800- 688-5652), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. “Street Bond Colorant” is a highly concentrated, high quality, UV stable pigment blend designated to be added to Street Bond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the drawings. The same Street Bond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of Street Bond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer’s Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture’s original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with Section 6 along with the following documentation:

1. Manufacturer’s specifications and procedures for materials and installation.

2. Manufacturer’s certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer’s specifications and procedures has been tested in accordance with the ASTM E-274, Skid Resistance of Paved Surfaces using a standard ribbed full scale tire at a speed of 40 mph (FN40R), and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ROADWAY MATERIALS

A. Subgrade: The work shall consist of bringing the bottom of the excavations and the top of the embankments of the roadways between the outer limits of the roadway to a surface conforming to the lines, grades, and cross sections shown on the plans, of uniform required density, ready to receive the base or paving course. The final elevation of the subgrade shall be within 0.1 foot of the required elevation.

1. All submerged stumps, roots, and other unsuitable matter encountered in the preparation of the subgrade shall be removed and replaced with a suitable material.

2. The material in the top 12” of subgrade shall have a minimum CBR of 25 when compacted to 95% of maximum density as determined by AASHTO Specification T 180-74. In areas such a condition does not exist, the top 12” of subgrade shall be stabilized as described below:

3. Stabilizing Material: Where stabilized subgrade and shoulders are required, the subgrade and shoulder material shall have a minimum California Bearing Ratio Material Value not less than 25. If the in place subgrade or shoulder material has a CBR value less than 25, a suitable stabilizing material shall be added. Such stabilizing material shall be crushed lime rock, coarse lime rock screenings, or any other stabilizing material approved by the Engineer.

4. Suitable stabilizing materials obtained from an existing base or pavement which is to be replaced or abandoned may be used providing that such material contain no fragments larger than 3 ½ inches in diameter.

5. The entire subgrade, including 2 feet beyond the edge of the proposed pavement, shall be thoroughly plowed, scarified, and mixed to a depth of not less than 6 inches below grade. All pot holes and other irregularities shall be filled with suitable material or trimmed down as the case may be, prior to compacting. If the area is cut to grade in natural lime rock, the top 6 inches shall be thoroughly plowed, scarified, and mixed. This plowed, scarified, and mixed layer shall be compacted to not less than 95 percent of the maximum density as determined by AASHTO Specifications T 180-74 prior to the placement of the base course.

6. After the subgrade has been prepared as specified above, the Contractor shall maintain it free from ruts, depressions, and damage resulting from the hauling and handling of any material, equipment, tools, etc. Ditches or drains shall be constructed and maintained along the completed subgrade section. Just before the base course is laid, the subgrade shall be tested as to, elevation and density.

B. Transporting Lime rock: The lime rock shall be transported to the point where it is to be used, over rock previously placed if practicable, and dumped on the end of the preceding spread. No hauling over the subgrade or dumping on the subgrade shall be done

C. Spreading Lime rock:

1. When using new material, the lime rock shall be spread uniformly, and all segregated areas of fine or coarse rock shall be removed and replaced with well-grade rock.

2. When the specified compacted thickness of the base is greater than 6-inches, the base shall be constructed in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished base, or enough additional to bear the weight of the construction equipment without disturbing the subgrade.

3. When using the existing base material, the Contractor shall expose the existing base material to the final base grade shown on the drawings. The Contractor shall then proceed with scarifying the top 6 inches of the base and reworking and compacting the material to achieve the required cross-section.

4. Minimum longitudinal slope shall be 0.3% for all roadways. For roadways with gutters, the longitudinal slope may be reduced upon approval by the Public Works Department.

D. Compacting and Finishing Base:

1. General:

   a. For single course base, after spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compacting.

   b. For multi lift base course, the first course shall be four (4) inches thick compacted cleaned of foreign material, bladed and brought to a surface cross section approximately parallel to that of the finished base. Prior to the spreading of any material for the upper course, the density test for the lower course shall be made and the Engineer shall have determined that the required compacting has been obtained. After the spreading of material for the second course is completed, its surface shall be finished and shaped so as to produce the required grade and cross section after compacting and free of scab and laminations.

2. Moisture Content: When the material does not have the proper moisture content to insure the required density, wetting or drying will be required. If the material is deficient in moisture, water shall be added and uniformly mixed in by discing the base course to its full depth. If the material contains an excess of moisture, such excess shall be reduced or removed until the required moisture content is attained before being compacted. Wetting or drying operations shall involve manipulation of the entire width and depth of the base as a unit.

3. Density Requirements: As soon as proper conditions of moisture are attained, the material shall be compacted to a density of not less than 98 percent of the maximum density as determined by AASHTO Designation T-180 as described below:

   a. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determinations on the finished base.

b. At least three density determinations shall be made at the completion of each course, also the density determinations shall be made at new/replaced every utility crossings and also at every 7,000 square feet of roadways or at more frequent intervals if deemed necessary by the Engineer.

4. Correction of Defects:

a. If at any time the subgrade material should become mixed with the base course material, the Contractor shall dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

b. If cracks or checks appear in the base, either before or after priming, which in the opinion of the Engineer would impair the structural efficiency of the base course, the Contractor shall remove such cracks or check by re-scarifying, reshaping, adding base material where necessary and recompacting.

E. Testing Surface: The finished surface of the base course shall be checked with a templet cut to required crown and cross section and with a 10-foot straightedge laid parallel to the centerline of the road. All irregularities greater than 1/4-inch shall be corrected by scarifying and removing or adding lime rock as may be required, after which the entire area shall be recompacted as specified herein before.

F. Thickness Determinations:

1. The thickness of the compacted lime rock base shall be measured at intervals of not more than 200-feet. Measurements shall be taken at various points on the cross sections prior to the application of the prime coat.

2. The measurements shall be taken in holes through the base of not less than 3-inches in diameter. Where the compacted base is deficient by more than 1/2-inch from the thickness called for on the drawings, the Contractor shall correct such areas by scarifying and adding lime rock. The base shall be scarified and rock added for a distance of 100-feet in each direction from the edge of the deficient area. The affected areas shall then be brought to the required state of compaction and to the required thickness and cross section.

G. Priming and Maintaining:

1. The prime coat shall be applied only when the base meets the specified density requirements and the moisture content in the top half of the base does not exceed 90 percent of the optimum moisture content of the base material. At the time of priming, the base shall be firm and unyielding.

2. The Contractor will be responsible for assuring that the true crown and grade are maintained with no rutting or other distortion and that the base meets all the requirements at the time the surface course is applied.

3.0.2. INSTALLATION OF CONCRETE

A. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little rehandling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

B. Steel reinforcement is called for on the drawings shall be placed at mid slab depth and the fabric shall be maintained at this location during the placing and finishing operations.

C. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

D. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

E. Striking off, Consolidating and Finishing Concrete:

1. Immediately after the placing, the concrete shall be struck off, consolidated and finished, to produce a finished pavement conforming to the cross section, width and surface finish required by the drawings and specifications. The sequence of operations shall be as follows: strike-off; vibratory consolidation; screeding; floating; removal of laitance; straight edging; and final surface finish. Strike-off, consolidation and finishing shall be accomplished in a manner such as to avoid damage to, or misalignment of, joint assemblies, dowels and other embedded items.

F. Straight edging and Surface Correction:

1. After floating has been completed and the excess water removed, but while the concrete is still in a plastic state, the surface of the concrete shall be tested for trueness with an accurate 10-foot straightedge. The straightedge shall be furnished by the Contractor. The straightedge shall be held in successive positions parallel to the road center line, in contact with the surface, and the whole area tested from one side of the slab to the other as necessary. The advance along the road shall be in successive stages of not more than one-half the length of the straightedge. Any depressions shall be immediately filled with freshly mixed concrete and struck-off, consolidated and refinished. High areas shall be cut down

and refinished. Straightedge testing and surface correction shall continue until the entire surface appears to conform to the required grade and cross section.

2. As soon as the concrete has hardened sufficiently to be walked on, straight edging shall again be done. All surface irregularities exceeding ¼-inch in a 10-foot shall be corrected by grinding as directed by the Engineer.

G. Final Finish: As soon as the water sheen has disappeared from the surface of the pavement and just before the concrete becomes non-plastic, a light broom finish shall be given to the surface.

H. Edging:

1. After the final finish has been applied, but before the concrete has become non-plastic, the edge of the pavement along each side of the strip being placed, on each side of transverse and longitudinal contraction joints and construction joints and along structure extending into the pavement, shall be carefully rounded to a ¼-inch radius except as otherwise indicated. A well-defined and continuous radius shall be produced and a smooth, dense mortar finish obtained. All concrete shall be completely removed from the top of the joint filler.

2. All joints shall be checked with a straightedge before the concrete has become non-plastic and, if one side of the joint is higher than the other or the entire joints is higher or lower than the adjacent slabs, corrections shall be made as necessary.

I. Joints:

1. Transverse Construction Joints: Transverse construction joints shall be constructed at the end of all pours and at other locations where the paving operations are stopped for as long as 30 minutes. Construction joints, however, shall not be placed within ten feet of any other transverse joint or of either end of a section of pavement. If sufficient concrete has not been placed to form a slab at least ten feet long, the excess concrete, back to the last preceding joint, shall be removed. The joints shall be formed by placing a wood or metal bulkhead accurately and securely in place, in a plane perpendicular to the profile and center line of the pavement.

2. Transverse & Longitudinal Contraction Joints: Construction joints shall be constructed at the interval indicated in the plans and shall consist of planes of weakness created by an edging tool. The cut in the fresh concrete shall be perpendicular to the surface of the pavement, shall extend to a depth of 1/3 of its thickness (1 ½" for 4" pavement) and shall have tooled edges as described above.

3. Expansion Joints: ½" Expansion Joints shall be formed by placing performed joint filler around all structures and foundations where pavement abuts curbs and gutters and at intervals not to exceed 100'.

4. Cleaning and Sealing Joints: Joints which are to be sealed, shall be filled with joint sealing material before the pavement is opened to traffic and as soon after completion of the curing period as is feasible. Just prior to sealing, each joint shall be thoroughly cleaned of all foreign material (including any membrane curing compound) and the joint faces shall be clean and surface-dry when the sealer is applied.

    a. The sealing material shall be applied to each joint to conform to the details shown on the drawings and in accordance with the manufacture's recommendation. The pouring shall be done in such manner that the material will not be spilled on the exposed surfaces of the concrete. Any excess material on the surface of the concrete pavement shall be removed immediately and the pavement surface cleaned.

    b. All cracks occurring in the pavement prior to its acceptance shall be cleaned out and sealed as specified above, except that the cracks and fractures shall be completely filled with joints sealer and any excess filler material cut down level with the pavement surface.

3.0.3. INSTALLATION OF CONCRETE PAVERS

A. Install paver blocks as manufactured by licensee of Paver Systems, Inc., in accordance with the Drawings, manufacturer's recommendations, and Standard Details. Paver block construction shall conform to the requirements of Interlocking Concrete Pavers Institute (ICPI).

B. Where necessary to cut blocks, cutting shall be done so as leave tight joint along all adjacent edges and surfaces. Smoothly split or sawn blocks only will be accepted.

C. After final vibrating/compaction there shall be no more than ¼ inch deviation from proposed grades.

D. Installation of concrete pavers in non-roadway areas shall be in accordance with the following.

D. Replacement of all underground utilities that are in conflict with paver installation.

E. The finished subbase shall be approved before placement of limerock base.

F. The limerock base course shall be compacted to 98% of maximum dry density as per AASHTO T-180.

G. The finished limerock base course shall be approved by the City or designee prior to placement of the sand leveling course.

H. The uncompacted sand leveling base shall be screened over the compacted limerock base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

I. The paver blocks shall be laid in the pattern approved by the City of Opa-Locka Public Works Department in accordance with the Standard Details.

J. Construct concrete header curb in accordance with the Standard Details.

E. Installation of concrete pavers in on roadways shall be in accordance with the following.

K. Replacement of all underground utilities that are in conflict with paver installation.

L. The finished subbase shall be approved before placement of the concrete slab.

M. The concrete pavers on the roadway shall be installed over a 6-inch-thick concrete base reinforced with galvanized steel wire mesh 6X6-W1.4xW1.4 with 1½ inches bedding between the concrete base and the concrete pavers.

N. The uncompacted sand leveling base shall be screened over the concrete base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

O. Construct concrete header curb in accordance with the Standard Details..

3.0.4. INSTALLATION OF TEXTURED PAVEMENT

A. Applying a patterned and/or textured treatment to asphalt or concrete, in accordance with manufacturer's recommendations. Applications include the following:

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated / imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the Engineer will check the area at random location for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e. all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.5. INSTALLATION OF SIDEWALK

A. Sidewalks at intersections and driveways shall be six (6) inches thick. Driveways shall include a 4-foot section at 2% maximum cross slope as per Standard Details and FDOT Index 522-03.

B. Sidewalks not at intersections or driveways shall be four (4) inches thick.

C. The concrete for sidewalk shall be 3,000 psi, with Miami-Dade County's sidewalk color standard match existing.

D. The concrete shall be reinforced with 6X6-W1.4xW1.4 welded steel wire mesh.

E. Wherever possible, sidewalks shall be designed with a minimum effective width of 6 feet on residential streets and 8 feet on collectors and arterials. Effective sidewalk widths shall be determined in accordance with the Miami Dade County Standard Details, firstly, and FDOT if not specified.

F. All wayfinding signage shall be installed in the back of the sidewalk wherever permitted by sight visibility, otherwise 4 feet minimum clear pedestrian path around sign shall be provided.

G. Repair of Concrete Sidewalk Surface Defects:

P. Remove and replace all concrete surfaces that contain surface defects, which includes, but not limited to cracking, cracks which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets and other objectionable and rough conditions and other objectionable conditions deemed unacceptable to the Engineer immediately after form removal. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness.

Q. Concrete rejected for any reason is to be removed and replaced, including labor, forms and reinforcing, to meet specifications at no additional cost to the City. Compounds for adhesion or as patching ingredients may be used, if approved by the City or designee. All repair of surface defects to be made require the approval of the City or designee, as to the method and procedure. Approval of the completed work must be obtained from the City or designee.

R. Remove existing sidewalk, or curb and gutter to either the nearest joint beyond or to where no remaining section is less than five (5) feet long.

3.0.6. INSTALLATION OF CURB RAMPS

A. It is the policy of the City of Opa-Locka Public Works Department to install truncated dome detectable warnings on the curb ramps, in compliance with the ADA Standards and PROWAG requirements for detectable warnings on walking surfaces and with FDOT standards. Curb ramps shall be directional and aligned with the crosswalk. Refer to the City of Opa-Locka Street Design Guidelines.

B. The installation of truncated domes on curb ramp shall be in compliance with the FDOT Index 522-002 and FDOT Specifications Section 527 and associated QPL. This Specification excludes stamped concrete detectable warnings due to poor performance.

C. The detectable warnings are required to have a dark-on-light or light-on-dark contrast with the surrounding concrete. Use Miami-Dade County' color standard on the detectable warning portion of the curb ramp. The color of the detectable warnings shall be integral with the device material.

D. Provide certification from an independent testing laboratory that the applied detectable warning device meets the above minimum requirements. Submit this certification for review and approval by the City or designee at least 10 days before the planned installation of any applied detectable warning device.

E. At least ten (10) days before the first installation of any applied detectable warning device, submit manufacture's installation recommendations and instructions for review and approval by the City or designee.

F. Special Considerations: 2 curb ramps per corner should always be used unless technically infeasible. US Access Board Public Rights-of-Way Access Advisory Committee strongly discourages single installations where possible because single ramps can:

1. Misdirect blind pedestrians who use the slope of curb ramps as a cue.

2. Increase crossing times for persons who use wheeled mobility aids and can place users into oncoming traffic at small radius corners where it is difficult to provide landing space at the bottom that is wholly within marked crossings.

3. Drivers may not be as alert to persons crossing at the apex of a corner.

G. If a single diagonal curb ramp is installed because of technical infeasibility, a 48 inches clear space wholly contained within the crosswalk must be provided at the bottom of the curb ramp to allow wheelchair users enough room to maneuver off of the ramp and into the crosswalk

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section includes minimum construction requirements for standard sewer manholes and precast concrete wet wells. It also includes precast concrete manhole sections with bell and spigot joints with masonry transition to covering, anchorage, coating/lining and accessories.

1.0.2. REFERENCES:

Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current editions of the following standards:

A. Florida Building Code

B. ACI 318, Building Code Requirements for Reinforced Concrete; ACI 350 Code Requirement for Environmental Engineer Construction Structures.

C. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

D. ASTM C62 - Specification for Building Brick (Solid masonry units made from Clay or shale).

E. ASTM C478 - Precast Reinforced Concrete Manhole Sections. F. ASTM A123 - Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

1.0.3. SUBMITTALS, INSPECTIONS

Submit the following information for approval. Fabrication shall not begin until submission has been approved.

A. Satisfactory evidence that plant and production methods meet the requirements of PCI MNL 116 for the Quality Control of the Precast Plant, Concrete Batch Plant and Testing Lab.

B. Submit Design mix to the Engineer prior to fabrication.

C. Complete shop drawings of both concrete structure and castings and showing all dimensions, reinforcement data, concrete strengths, etc. If of a non-standard design or if required by the Engineer of Record submit design calculations and data. All computation shall bear the seal of a Professional Engineer registered in the State of Florida.

D. Manhole and Wet Wells: The City shall have the option of witnessing the manhole wet well pour, reinforcing or formwork prior to fabrication. Provide the Engineer a schedule of the manhole fabrication at the preconstruction meeting.

E. Provide a rebar cutting lists for Pump Station Wet Wells. The rebar cut list is not required for standard manholes.

F. Cylinder breaks shall be done for each lot in accordance with FDOT Standards (max of 50 structures per LOT). The manufacturer shall maintain records of the cylinder breaks for each design mix. The 28-day concrete cylinder break reports shall be submitted to the Department once the 28-day before the project closeout.

1.0.4. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience. United Concrete Products, Landmark Precast, Concrete Products of the Palm Beaches, TJ Precast, US Concrete Products or Approved equal.

B. Quality Control Plan approved by the FDOT. The testing laboratory and batch plant shall be included in the FDOT Quality Control Plan.

C. The Precast Manufacturer shall have a stamp from the Quality Control Manager on each completed precast structure. The Quality Control Manager Stamp shall indicate that the manhole was constructed in accordance with ASTM C478 and Municipality Standards and the date that the structure was fabricated.

1.0.5. TRANSPORTATION

A. A. The precast concrete structure shall cure for a minimum of 72 hours. Transport of the precast structure to the jobsite is not allowed during the 72 hour curing period.

B. Comply with all applicable requirements of FDOT Section 450-16 Handling, Storage, Shipping and Erection.

PART 2 – PRODUCTS

2.0.1. MATERIALS

Precast manholes shall conform to the requirements of ASTM C478, latest edition, the Miami-Dade Water and Sewer Department Standard Details and the following:

A. Properties:

1. Reinforcement of Grade 60 bars. (Pump Station Wet Wells require rebars not wire mesh reinforcing).

2. Concrete 4,000 psi.

3. Water Cement Ratio: 0.40 to 0.34 Standard Manholes, 0.34 Pump Station Wet Wells.

4. Waterstops: Ribbed PVC Waterstop with centerbulb.

B. Cement shall be Type II with a **maximum aggregate size of #57**. Aggregate shall be **well graded** to produce a less porous and stronger concrete.

1. **Gravity Sewer System Manholes:** In sanitary sewage applications, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer terminal manhole within a 350 foot radius of the pump station, drop manholes, or where called for in the plans and/or specifications shall have a concrete protective coating or a antimicrobial admixture in the concrete mix.

   The antimicrobial admixture in the concrete mix is specified below:

   a. An antimicrobial agent, ConMICShield® , or approved equal, shall be used to render the concrete uninhabitable for bacteria growth.

   b. Contractor shall mix the liquid antimicrobial additive with the total water content of the concrete mix design in a proportion of 1 gallon per cubic yard. In the case of repairs to damaged concrete a proportion of 2 gallons per cubic yard shall be utilized.

   c. In some instances all of the concrete in the structure will receive the additive and in other instances only a portion of the concrete will receive the additive. Hence, the Contractor shall apply the additive only as directed in the specific instance.

   d. Precast Plant shall submit a letter of certification to the Department, stating that the correct amount and correct mixing procedure was followed for all antimicrobial concrete.

   e. ConMICShield® antimicrobial additive shall be as manufactured by ConMICShield® Technologies, Inc.; 541 Tenth Street NW #233, Atlanta, GA 30318; Phone: (877)543-2094

C. Minimum shell thickness of manholes shall be eight (8) inches.

D. Lifting holes through the structure will not be permitted

E. Three to five courses of brick shall be constructed atop the manhole corbel for height adjustment. Manhole adjustment grade rings may be utilized in lieu of clay bricks.

F. Precast Joints above Elevation +4.0. and Waterproofing

1. Standard Manhole: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Non-Shrink Grout both inside and outside of the joint. Wrap the outside Corbel and Exterior joint with a heat activated high shrink membrane.

2. Pump Station Wet Wells: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Xypex Concentrate Cementitous Slurry or approved equal to the exterior and interior of the joint between precast members for waterproofing.

G. Holes for pipe connections, with a diameter equal to the outside dimension of the connecting pipe plus an additional 4-inches, shall be formed in the manhole walls. No cutting or chipping of the pre-formed holes, or cutting additional holes in the precast concrete walls will be permitted.

H. The bottom slab shall be cast monolithically with the lower section and the longitudinal reinforcement extending into the slab. The free air drop of the mix shall not exceed five feet.

I. No construction joints will be allowed below an elevation of four feet above mean sea level. Construction joints will be allowed above elevation+4.0, if adequate keyways and waterstops, approved by the Department (Ribbed PVC waterstop with centerbulb), are provided. The Department may approve an alternate joint method in cases of excessively deeper and heavy structures.

J. Built-in ladders or climbing rungs will not be permitted in any sanitary sewer manhole and only in other structures where shown on the Plans and called for in the specifications.

K. Openings shall be sealed with hydraulic cement non-shrink grout on both the exterior and interior of the structure.

L. Furnish manholes with accessories listed under "Manhole Accessories", below.

M. Lid and Frame: See Section 05550, "Castings".

N. Waterproofing:

1. Xypex Crystalline Waterproofing Admixture C-1000R with red dye or approved equal, applied at 3% of the volume of Portland cement in the manhole by volume.

2. Rheomac 300D Admixture as manufactured by BASF with red dye applied at 2% of the volume of Portland cement in the manhole by volume.

3. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

Note: The Engineer may accept certification from the precast fabricator in lieu of the red dye

2.0.2. CLAY BRICK UNITS AND GRADE RINGS

A. Clay brick shall be used in manhole construction. Clay brick shall conform to ASTM Standard C32, "Building Brick (Solid Masonry Units Made from Clay or Shale)". Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed in any wall. Under no circumstances shall brick with holes be utilized anywhere in construction of a manhole or other structure unless specifically called out on the Plans or in the Specifications.

B. Manhole adjustment grade rings may be utilized. Rings shall be made of 100% recycled HDPE and available in cone opening diameters of 24, 27, 30 and 36-inches. Slope adjustment shall be attained by rotation of "wedge" rings from 4.1% to 0% grade. Rings shall have been tested to withstand HS25 loading through at least 1,100,000 cycles without cracking or other damage. Rings shall not be damaged by hydrogen sulfide manhole conditions and shall be waterproof when assembled with approved butyl sealant. Ring shall weigh six pounds or less and be equipped with UV inhibitor. Rings shall have been in successful service in multiple locations within the US for at least ten years and shall be warranted for five years. Rings shall be LadTech, Inc. HDPE Recycled Adjusting Rings or approved equal.

C. Exterior Shrink Membrane not required on the HDPE Grade Rings.

2.0.3. MORTAR AND GROUT

As specified in Section 04060 and 03600, respectively. Only Type II cement shall be used.

2.0.4. REINFORCEMENT

As specified in drawings firstly, and on Miami-Dade County Standard Details.

2.0.5. SUMP

Where required, formed integrally with the base slab.

2.0.6. CONCRETE PROTECTIVE COATINGS **(Gravity Sewer Manholes)**

A. For manholes standard manholes that do not have a concrete protective coating or an antimicrobial additive (ConShield)in the mix, coat the interior of the manhole with Bitumastic 300M or approved equal, 16 mils minimum thickness. The manholes with a concrete protective coating or ConShield anti-bacterial admixture shall not have Bitumastic on the interior of the manhole.

Locations that require a Concrete Protective Coating or the Con Shield Admixture:

1. Manholes receiving the discharge of a force main.

2. Manholes within a 350 foot radius of a pump station wet well.

3. Drop manholes (if a drop connection is added to an existing manhole the existing manhole shall be rehabilitated with a concrete protective coating).

4. Any manhole location determined by the Engineer to have the probability of generating large quantities of sewer gas.

B. All concrete protective coating systems shall be pre-approved by the Water and Sewer Department based on testing done within the WASD system. Only products that have had a successful test application within the Miami-Dade Water and Sewer Department system and approved by WASD forces shall be allowed.

PREAPROVED PRODUCTS LIST- concrete protective coatings (standard manholes)

1. Available Manufacturers: The manhole coating products below have passed the WASD testing protocol and have been approved for use for rehabilitation of standard manholes. The manhole rehabilitation products shall be used as a complete system with no third party products used unless approved in writing by the coating manufacturer. A one year warranty on the complete coating system from the project completion is required.

    a. Uroflex as manufactured by Epoxytec International

    b. PPC as Manufactured by Polymorphic Polymers Corporation

    c. SP15 Spray Mortar, Sewer Guard HBS 100 Epoxy Liner by BASF

    d. Permaform MS-10,000 Fortified with ConShield or Cor-Guard Epoxy

    e. SprayRoq, Spray Wall and SprayShield GT Coating

    f. GEOKRETE System as manufactured by Quadex

    g. Mainstay DS-5 High Build Epoxy, Mainstay ML-72 Restoration Mortar

    h. GML Coating System: Green Monster Epoxy, GML-30 and GML-60 Epoxy Cement

    i. Raven Lining System: Raven 405 Epoxy, Raven 755 Epoxy Mortar

2. The manhole chimney shall utilize a flexible concrete protective coating. The acceptable flexible interior coatings for the manhole Chimeny are Epoxytec Uroseal, Uroflex or Geokrete.

C. Due to the probability of sewer gas generation, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer, drop manholes, or within a 350-foot radius of the terminal manhole immediately upstream of the pump station shall be either constructed of concrete containing Con^{MIC}Shield® antimicrobial additive or lined on all interior concrete surfaces with a pre-approved concrete protective coating or approved equal. Concrete protective coating system shall fully protect openings, such as for pipes, to insure that corrosive attack cannot take place at these locations. Protective system design for these areas will be checked as shop drawings. Note that boot systems are not accepted by the Department.

Since the proprietary grouts used to close the annular area between the manhole wall and pipe entering or leaving the manhole are not compatible to the addition of Con^{MIC}Shield® these areas require liner or coating (as acceptable to the Engineer) protection even in manholes constructed of concrete containing this material.

D. All manhole exterior surfaces, from finished grade to base, shall be coated with Carboline Bitumastic 300M, 2 coats 16 mils minimum thickness or have Xypex/BASF Crystalline Waterproofing Admixture, applied at 2 to 3% of the volume of portland cement in the manhole by volume. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

E. If Con^{MIC}Shield® anti-microbial agent is used, interior coating and liners can be eliminated except as specified above. 2.07 CONCRETE ADDITIVE AND PROTECTIVE COATINGS (Pump Station Wet Wells).

2.0.7. MANHOLE ACCESSORIES:

All new sanitary sewer manholes shall be furnished with the following items. Where existing manholes will be modified or are scheduled to be refurbished, rehabilitation shall also include the following items unless otherwise approved by the Department.

A. Provide concrete protective coating system for manholes installed in locations identified to have high levels of sewer gas.

B. Provide high density polyethylene manhole infiltration inserts in accordance with Section 02625, unless the Department requires the installation of stainless steel insert.

C. Exterior Shrink Membrane on Corbel and Exterior Joint; On all manholes (excluding the HDPE grade rings)install a heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section. Membrane shall be Wrapid Seal, by Canusa Corrosion Protection and Sealing, or approved equal with the following properties:

PRODUCT COMPONENT	PROPERTY	TEST STANDARD	UNIT	RESULTS
ADHESIVE	Softening Point	ASTM E28	Deg. C (Deg. F)	100 (212)

	Lap Shear Strength	DIN 30 672	N/cm2 (psi)	8 (12)
BACKING	Tensile Strength	ASTM D638	MPa (psi)	20 (2900)
	Elongation	ASTM D638	%	600
	Hardness	ASTM D2240	Shore D	46
	Abrasion Resistance	ASTM D1044	mg	45
SLEEVE	Peel Strength	ASTM D1000	N/cm2 (psi)	15 (9)
	Water Absortion	ASTM D570	%	0.05
	Low Temp. Flexibility	ASTM D2671D	Deg. C (Deg. F)	-40 (-40)

PART 3 – EXECUTION

3.0.1. EXCAVATION

A. Refer to Section 02314, "Excavation, Backfill and Fill for Structures" for specific procedures, requirements and testing methods appurtenant to the work under this Section.

B. Excavation shall extend to a level 12-inches below the level of the outside bottom of the base slab. If necessary, provide sheeting and shoring for the excavation.

C. Backfill resulting excavation with drainfield limerock or specified bedding material to a level to receive the structure at the proper elevation.

3.0.2. GENERAL INSTALLATION

A. The precast base shall be set level, with the walls plumb on the graded crushed rock bedding.

B. B. If any surfaces of structures are exposed to view and to a depth of 6 inches below grade, the Contractor shall fill all depressions and all air holes with mortar, dampen surfaces, and apply an approved bonding agent then spread slurry, consisting of one part cement and one and one-half parts sand, by damp loose volume, on the surface with clean burlap pads and sponge rubber floats. The Contractor shall remove any surplus by scraping and then rubbing with clean burlap. Finish surface shall be suitable to receive paint.

3.0.3. INSTALLATION OF MANHOLES

A. Place base slab and manhole sections plumb and level. Coat exterior of precast structure with Bitumastic 300M or approved equal. Install heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section.

B. During all backfilling operations, the backfill level shall be kept even on all sides of the structure. Exercise every precaution to prevent damage to, or unplanned loading of, the structures and its appurtenances.

C. Lay clay brick in running bond. A minimum of three and a maximum of five courses shall be constructed atop each manhole corbel. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other work. Stucco inside and out with 3/4-inch of mortar.

D. Set cover frames and covers level without tipping, to correct elevations.

E. Exterior surfaces of all structures shall be painted prior to the installation as specified elsewhere herein.

F. Openings shall be sealed with non-shrink grout. No expanding grout shall be allowed.

G. After satisfactory installation and testing, all interior concrete surfaces of the new manhole shall be seal coated in accordance with Section 2.06-A.

H. The invert channels of the manhole shall be formed of brick or brick rubble thoroughly bedded and covered with sand-cement grout, accurately shaped to a semi-circular bottom conforming to the lower half of the connecting sewer pipe. Steep slopes outside the invert channels shall be avoided. Changes in size and grade shall be made gradually and evenly. Changes in the direction of the sewer or entering branch shall be a smooth curve with radius as long as practicable.

I. It shall be the Contractor's responsibility to assure that the frames and covers are set to match proposed finish paving grades at the manhole locations.

J. Gravity sewers shall connect to the manholes in accordance with Standard Details SS 7.0 and Section UC-250 "Gravity Sewer Systems".

3.0.4. ALTERNATE INSTALLATION

Installation methods given below in this Section shall only apply if permission is granted by the Engineer of Record to use the "Alternate Method of Construction" as specified elsewhere herein. All provisions of that Section shall be applied to the installation of the structures with the specific modifications as follows:

A. Excavation

Excavation shall be carried to a depth of two feet below the bottom of the base slab.

B. Special Bedding

1. Bedding shall be crushed stone or gravel meeting the requirements of ASTM Standard C33 "Concrete Aggregates", latest edition, gradation 67.

2. The bedding shall be placed in the excavation from cut bottom to the level of the bottom of the slab. Thereafter it shall be thoroughly rammed and tamped by use of a crane and weight or other means suitable to the Engineer of Record to provide a stable base for the structure. Tamping and, if necessary, additional filling shall be carried on until the Engineer of Record is satisfied that a suitably stable base has been created for the structure.

C. Backfill

1. After the structure is installed, special bedding material as specified immediately above shall be carefully hand or machine tamped around the structure up to a level of no more than eighteen inches above the water level. Thereafter the procedures and materials specified for backfill and compaction, shall be used to complete the installation.

2. During all backfilling operations the backfill level shall be kept even on all sides of the structure and the Contractor shall exercise every precaution to prevent damage to, or unplanned loading of, the structure or its appurtenances.

END OF SECTION

02620 CORRUGATED HDPE DRAINAGE PIPE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, joints and accessories within the limits of work, as shown on the Plans and specified herein. This section also includes the furnishing and construction of such joints and such connection to existing pipes, catch basins, inlets, manholes, among other structures, as required to complete the work as indicated on the Plans.

B. The Contractor shall perform the final cleanup and restore all site conditions to original or better conditions.

1.0.2. RELATED SECTION

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

1.0.3. QUALITY CONTROL

A. All material and installation shall be in accordance with the City‘s Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City’s designated representative in the field shall be followed by the Contractor.

C. The tubing or pipe shall not be left exposed to sunlight for periods exceeding the manufacturer’s recommendation.

D. For storm drain side drain, french drain and cross drain corrugated polyethylene pipe shall meet the requirements of AASHTO M 294 and 948-2.3.

E. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

F. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

G. Obtain pipe from a production facility that is listed on the FDOT Production Facility Listing. Producers seeking inclusion shall meet the requirements of Section 105 of FDOT Standards.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

B. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

Table 948-1
Stress Crack Resistance of Pipes

Pipe Location	Test Method	Test Conditions	Requirement
Pipe Liner	FM 5-572, Procedure A	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time of the pipe liner shall be ≥18.0 hours, no single value shall be less than 13.0 hours.
Pipe Corrugation(1) (molded plaque)	ASTM F2136	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time shall be ≥24.0 hours, no single value shall be less than 17.0 hours.

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Junction	FM 5-572, Procedure B and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Longitudinal Profiles(6)	FM 5-572, Procedure C, and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Liner and/or Crown(7)	OIT Test (ASTM D3895)	2 replicates (to determine initial OIT value) on the as manufactured (not incubated) pipe.	25.0 minutes, minimum

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Liner and/or Crown(7)	Incubation test FM 5-574 and OIT test (ASTM D3895)	Three samples for incubation of 265 days at 176°F(8) and applied stress of 250 psi. One OIT test per each sample	Average of 3.0 minutes(9) (no values shall be less than 2.0 minutes)
Liner and/or Crown(7)	MI test (ASTM D1238 at 190oC/2.16Kg)	2 replicates on the as manufactured (not incubated) pipe	< 0.4 g/10 minutes
Liner and/or Crown(7)	Incubation test FM 5-574 and MI test (ASTM D1238 at 190°C/2.16Kg)	2 replicates on the three aged sampled after incubation of 265 days at 176°F(8) and applied stress of 250 psi	MI Retained Value(9)(10) shall be greater than 80% and less than 120%.

Note: FM = Florida Method of Test.

(1) Required only when the resin used in the corrugation is different than that of the liner

(2) A higher test temperature (194°F) may be used if supporting test data acceptable to the State Materials Engineer is submitted and approved in writing.

(3) Full test shall be performed on alternative pipe diameter of pipe based on wall profile design, raw material cell classification, and manufacturing process. Full test must be performed on maximum and minimum pipe diameters within a manufacturing process

(4) Computer program to predict the 100 year SCR with 95% lower confidence can be obtained from FDOT.

(5) Single test for the junction and longitudinal profile may be used on alternating pipe sizes within a manufacturing process. Single point tests may not be used on maximum and minimum pipe sizes within a manufacturing process except by approval of the Engineer. Single point tests may be used for quality assurance testing purposes.

(6) Longitudinal profiles include vent holes and molded lines.

(7) OIT and MI tests on the crown are required when resin used in the corrugation is different than that of the liner.

(8) The incubation temperature and duration can also be 196 days at 185°F.

(9) The tests for incubated and "as-manufactured" pipe samples shall be performed by the same lab, same operator, the same testing device, and in the same day.

(10) The MI retained value is determined using the average MI value of incubated sample divided by the average MI value of as manufactured pipe sample.

PART 3 – EXECUTION

3.0.1. EXCAVATING TRENCH AND BACKFILLING

A. Excavate the trench in accordance with Section 02314 "Excavation, Backfill and Fill for Structural Facility and Utility Systems" unless specific trench excavation procedures are described in the Plans.

B. Carefully excavate the trench to such depths as required to permit the bedding material and the pipe to be placed in accordance with the details shown in the Plans.

3.0.2. LAYING PIPE

A. No pipe may be laid when water is above the spring line. The spring like being defined as the horizontal center line of pipe. The Contractor shall be responsible for all dewatering of trenches as required by the Engineer.

B. Each piece section of pipe shall be cleaned and inspected just before being lowered into the trench. Any section that has been damaged in handling, or is found to be defective to a degree which will materially affect the function and service of the pipe, shall be rejected for installation. Pipes having defects that have not caused their rejection are to be so laid that those defects will be in the upper half of the sewer. If any difficulty is found in fitting the pieces together, this fitting is to be done one the surface of the street before laying the pipe, and the tops plainly marked in the order in which they are to be laid. No pipe is to be trimmed or chipped to ft.

C. Each pipe shall be laid to the line and grade provided by the Engineer. All pipes shall be laid with bells or grooves uphill and tongue end fully entered into the hub. Each pipe is to be solidly and evenly bedded, and not simply wedged up before finishing each joint. Some suitable device is to be used to find that the inverts coincide. No length of pipe shall be laid until the two proceeding lengths have been thoroughly embedded in place, so as to prevent any movement or disturbance of the finish joint.

D. As the pipes are laid through the work, they must be thoroughly cleansed and protected from dirt and water, and no water will be allowed to flow in the trench in any case during construction. No walking on or working over the pipes after they are laid will be permitted, except as may be necessary to backfill and compact the soil to a depth of one-foot above the top of the pipe.

E. Whenever the pipe laying is discontinued, as at night, the unfinished end is to be securely protected from displacement by caving of the banks or from other injury, and a suitable stopper is to be inserted therein.

END OF SECTION

02630 OUTFALL HEADWALL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for precast concrete headwalls. The headwalls shall be constructed in accordance with FDOT specifications and Standard Details, and in conformity with the Plans.

1.0.2. PRECAST PRESTRESSED CONCRETE CONSTRUCTION

A. Fabricate, store, transport and erect precast/prestressed concrete members prestressed by the pretensioning method. Pretensioned precast prestressed concrete products are products prestressed by the pretensioning method. In this method, steel or fiber reinforced polymer (FRP) components are stressed and anchored; the concrete for the product is then cast and cured, and finally the stress in the steel or FRP components is released from the anchorages to the concrete through bond, after the concrete has attained its specified release strength.

B. A precast prestressed concrete plant, hereinafter called plant, is an independent operating facility capable of performing all the operations necessary to fabricate precast/prestressed concrete products.

1.0.3. QUALITY ASSURANCE

A. The Engineer will perform periodic inspections, sampling, and testing to ensure of the quality and acceptability of the materials, methods, techniques, procedures and processes being utilized in the fabrication of precast prestressed concrete products.

1.0.4. RELATED SECTIONS

Section 03400 - PRECAST PRESTRESSED CONCRETE

PART 2 – PRODUCTS

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

PART 3 – EXECUTION

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

END OF SECTION

02730 STORMWATER AREA DRAINS AND INLETS

PART 1 – GENERAL

1.0.5. SCOPE OF WORK

A. This section includes minimum construction requirements for precast catch basins or cast-in-place with type Class I concrete and reinforcing steel or brick masonry with the necessary metal frame and grate. The catch basins shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 350 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Brick Masonry: shall be either clay or shale brick meeting the requirements of ASTM C62 or concrete building brick meeting the requirements of ASTM C-55.

D. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

E. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). They shall be cast to the size and dimensions shown on Standard Detail SD-2.3 or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONTRUCTION

B. Catch basins shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-2.1.

C. Catch basins shall be located within the right-of-way as shown on Standard Detail SD2.4 or SD-2.5. The pavement around catch basins constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

B. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the catch basin.

C. Brick masonry in catch basins shall be build of brick and mortar of the specified quality. All brick shall be saturated with water before being laid. The brick shall be laid using the shovejoint method so as to bond them thoroughly into the mortar. Headers and stretchers shall be so arranged as to bond the mass thoroughly. A limited amount of halfbrick may be used not exceeding one-third (1/3) of the whole, if properly bonded with whole brick. Joints shall be finished properly as the work progresses and shall be not less than ¼-inch and not more than ½-inch in thickness. No spalls nor bats shall be used except for shaping around irregular openings or when unavoidable at corners. Only experienced bricklayers shall be employed on this work.

D. Brick catch basins shall have a plaster coat of mortar ½-inch in thickness on the inside and outside, mortar shall be as specified in sub-article 320.02 f.

E. When the catch basin is to be constructed of concrete, the forms shall be placed to the depth shown on the Plans or as directed by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 340.b. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

3.0.2. PRE-CAST CONSTRUCTION

A. The Contractor may, at his option, use precast catch basin constructed in accordance with Standard Detail SD-2.2.

3.0.3. PIPE PLACEMENT

A. Inlet and outlet pipe shall be of the same size and kind as the connecting pipe. They shall extend through the walls for a distance beyond the outside surface sufficient for the intended connections. The Concrete shall be placed around them neatly so as to prevent leakage along their outer surface. The inlet and outlet pipes shall extend three-inches inside the inner surface of the catch basin.

B. A ½-inch mesh galvanized screen with removable clamp as approved by the Engineer, shall be placed on the outlet pipe.

END OF SECTION

02721 STORMWATER CURBSIDE DRAINS AND INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for swale inlets or curb inlets with type Class I concrete, reinforcing steel and the necessary frame, grate or cover. The inlets shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 355 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete with minimum strength 3,000 psi.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

D. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for the swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

   All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION

A. Inlets shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-3.1 or SD-3.2.

B. When inlets are to be cast in place, the forms shall be set to the depth shown on the Plans or as indicated by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 227. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed, and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

C. Swale inlets to be constructed in a driveway or swale shall be located as required for catch basins (Standard Details SD-2.4 or SD 2.5).

D. The pavement around inlets constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

C. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the inlets.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision or construction of stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Miami-Dade County Public Works Manual and/or Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed or constructed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. FRAME AND GRATE

Miami-Dade County Public Works Sections 350 & 55 states the following:

A. The quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for catch basins and/or swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

B. All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coaltar pitch varnish.

2.0.2. GRATINGS, COVERS, AND FRAMES

FDOT Section 425 states the following:

A. Use gratings and frames fabricated from structural steel or cast iron as designated in the appropriate Standard Plans Index. When “Alt. G” grates are specified in the Plans, provide structural steel grates that are galvanized in accordance with the requirements of ASTM A-123 and hardware galvanized in accordance with the requirements of ASTM A-153.

B. Use rigid frames and covers either 24 inches or 36 inches or optional three-piece adjustable frames and covers as indicated in Standard Plans, Index 425-001.

C. For three-piece adjustable frames, the inner frame may include replaceable resilient seats to support the cover. In addition, the inner frame shall indicate it is adjustable, by clearly having the word “adjustable” imprinted into the exposed portion of the inner frame so “adjustable” is visible from the roadway after installation.

2.0.3. IRON CASTINGS

FDOT Section 962 states the following:

A. Gray Iron Castings

1. Provide gray iron castings that conform to the requirements of AASHTO M-105.

2. For frames, grates, rings, and covers for inlets, manholes, and other structures placed in areas of vehicular traffic, conform to the requirements of AASHTO M 306. Unless otherwise specified in the Contract Documents, provide gratings, manhole covers and frames to Class 35B and machinery parts to Class 30.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02730 STEEL GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision of steel stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. STEEL CASINGS

A. Carbon Steel Castings

1. Provide carbon steel castings that conform to the requirements of ASTM A27. Unless otherwise specified in the Contract Documents, all castings are to be Grade 65-35 or Grade 70-36.

B. Corrosion Resistant Steel Castings

1. Provide corrosion resistant Iron-Chromium or Iron-Chromium-Nickel castings that conform to the requirements of ASTM A743. Unless otherwise specified in the Contract Documents, all castings are to be Grade CA 15M.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02745 PAVEMENT REMOVAL AND REPLACEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work included under this Section covers the furnishing of all labor, equipment and material required for cutting, removing, protecting, constructing, replacing or stabilizing all existing roadways, driveways and pavements of the various types encountered, removed or damaged under this Contract.

B. In addition, all existing utility castings, including valves boxes, junction boxes, handholes, pull boxes, inlets and similar structures in the areas of trench restoration, pavement replacement and pavement overlay shall be adjusted by the Contractor to bring them flush with the surface of the finished work.

1.0.2. QUALITY CONTROL

A. The phrase “FDOT Specifications” shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The FDOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as through reproduced herein in their entirety.

1.0.3. DAMAGE BY CONTRACTOR

A. The Contractor shall be responsible for the protection from damage from his construction operations, all pavements, including all base courses and surface courses, within the work area.

B. Payment for pavement restoration will be made only where such base courses or surface courses are encountered within the limits defined in the pavement repair details shown on the Plans and/or in the City Standard Details at the rear of the Specifications.

C. Any base course or surface course beyond those limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these specifications, to the satisfaction of the City, and to the satisfaction of the governing authority having jurisdiction over the work area.

D. Any damage to adjacent lanes of pavement will require the Contractor to resurface the entire lane width for a length, as approved by the City. When the damage amounts to 25 percent or more in any one block (approximately 600 feet), the Contractor shall resurface the entire width of the lane in which the damage occurred for the entire block.

E. The Contractor is hereby notified that wherever the line for repaving for trenches extends one foot into the edge of the existing paving, he shall repave to this edge only. Full lane paving will not be required. Damage to the pavement beyond this line by the

Contractor will require that he repave the full width.

F. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

G. No payment shall be made for pavement restoration which falls outside the above described limits and is required for thrust blocks and other appurtenant items. The cost for such work shall be included in the price bid for the applicable item.

H. It is brought to the Contractor's attention that wherever the line of the nominal repaving for trenches extend to within two (2) feet of the edge of the existing paving, he shall repave to this edge.

PART 2 – PRODUCTS

2.0.1. MATERIALS – GENERAL

A. Lime rock Base shall be as specified in Section 02526 "Concrete Pavement, Curb and Walkways".

B. Asphaltic Pavement, Prime Coat and Tack Coat shall be as specified Section 02750 "Asphaltic Concrete Pavement".

C. Sand cover material shall be clean and non-plastic, and shall be composed of hard durable grains, free from loam, silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. Local sand meeting such requirements may be used. Sand shall be subject to approval by the City.

D. 1:10 Mix: Sand-cement mix for backfill within state roads shall be a 1:10 mix of Type I or II Portland Cement and Sand that shall produce a slump of 4 to 6 inches.

2.0.2. BITUMINOUS PAVING MATERIAL

Asphalt cement for asphaltic concrete mixes shall be Viscosity Grade AC-20 or AC-30, homogeneous, free from water and shall meet the requirements of FDOT Specifications, Section 916-1. Unless otherwise specified, all test samples required shall be supplied by the Contractor. For friction courses, in addition to meeting the above requirements, the bituminous material shall contain 0.5% of a heat-stable, anti-stripping additive from an approved source.

A. Asphaltic Concrete - Type S-I Mix shall meet the requirements of FDOT Specifications for Type S-I Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications.

B. Asphaltic Concrete - Type I Mix shall meet the requirements of Miami-Dade County Public Works Department Specifications for Type I Asphaltic Concrete Surface Course, Section 133 of the Public Works Manual.

C. Asphaltic Concrete - Type III Mix for asphaltic concrete wearing surface overlay, both machine laid and standard (skin patch), shall meet the requirements of FDOT Specifications for Type III Asphaltic Concrete, Section 333-1 through Section 333-6.

D. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs. See subsection 3.07, below.

E. Asphaltic Concrete - Type FC-1, FC-2, FC-3 and FC-4 shall meet the requirements of D.O.T Specifications for Friction Courses, Sections 337-1 through Section 337-7.

F. Emulsified Asphalt for Slurry Seal Coat shall be of the slow-setting, mixing type and shall be homogeneous, meeting the requirements of the Asphalt Institute, Grade SS-1 or SS-1h.

G. Liquid Asphalt for Prime and Tack Coat: See Section 02741.

H. Liquid Asphalt for Sand and Asphalt Paving shall be asphalt cement, viscosity Grade AC-5 or emulsified asphalt, Grade RS-2 (anionic) conforming to the requirements of FDOT Specifications, Section 916-1 and 916-4, respectively.

I. Mineral Aggregate for Slurry Seal Coat shall consist of screened sand or limestone screenings or gray granite screenings or a mixture of sand and screenings plus not less than 3%, by weight, of Type I or Type II Portland cement.

PART 3 – EXECUTION

3.0.1. INSTALLATION – GENERAL

A. Permanent pavement repair shall be in accordance with the details shown in the Standard Details herein, with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

B. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Public Works Department.

C. All equipment necessary for construction shall be on the job site in first class working condition. Spilling or dropping of petroleum products is prohibited and all defective equipment shall be removed or replaced immediately. The Contractor shall be subject to all DERM (Department of Environmental Resources Management) regulations and clean up requirements.

D. The percentages of maximum density for subgrade and lime rock base specified herein are minimum. Greater percentages of maximum density shall be obtained, if so required, by the governing authority having jurisdiction over the work location.

E. Asphaltic concrete mixtures shall be obtained only from plants which comply with the requirements of FDOT Specifications, Section 320 as applicable, using materials specified herein, and producing the specified mixture. General construction requirements for all hot bituminous mixtures specified herein shall conform to FDOT Specifications, Section 330, as applicable.

I. Asphaltic concrete shall be laid only where the surface to be covered is intact, firm, cured and dry, and only when weather conditions are suitable. The temperature of the mixture at the time of spreading shall be within 25°F of the temperature set by the Engineer. No mixture shall be spread when the air temperature is less than 40°F nor when the spreading cannot be finished and compacted during daylight hours.

F. Any mixture caught in transit by a sudden rain may be laid at the Contractor's risk, if the base is in suitable condition. Under no circumstances shall asphaltic material be placed while rain is falling, or when there is water on the area to be paved.

G. Subgrade: Roadway subgrades shall be stabilized to the minimum depth shown on the drawings to a Lime rock Bearing Ratio of not less than 40. Stabilizing shall be Type B as defined in Section 160 of the FDOT Specifications. Stabilization may require the addition and thorough mixing in of crushed lime rock, course lime rock screenings, or any other stabilizing material acceptable to the City. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subgrade will have a LBR of not less than 40. Stabilizing material shall be mixed or blended in the subgrade material by plowing, scarifying, disking, harrowing, blading and mixing with rotary tillers until the mixed materials are of uniform bearing value throughout the width and depth of the layer being processed.

H. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City.

I. Lime rock Base: The lime rock base shall be constructed in accordance with Sections 200 and 911 of the FDOT Specifications, to the thickness and width indicated on the drawings.

J. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 8-inches.

K. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98 percent maximum density as determined in more than one course, the density shall be obtained in each lift of the base.

L. During final compacting operations, if blading of any areas is necessary to obtain the

true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

M. Unless otherwise directed by the Engineer of Record, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

N. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by rescarifying, reshaping, adding base material where necessary and recompacting.

O. Mixing Base and Subgrade: If at any time the subgrade material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

P. Asphaltic Concrete: The spreading, compacting and jointing the wearing surface shall be in accordance with Sections 330 and 331 of the FDOT Specifications to the thickness indicated on the drawings.

3.0.2. TEMPORARY PAVING

A. Prior to commencing excavation, the asphalt surface shall be saw-cut within the limits of the allowable trench width. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902.3 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with his excavation work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City permitting the work to allow greater lengths than 1,200 feet. Permitting agencies may reduce the allowable limits in their permit, or for other unforeseen right-of-way conditions.

C. Prior to completion of the work and within a maximum of 30 calendar days, the Contractor shall remove the 1 inch of cold mix and surplus backfill. The Contractor shall replace it with the specified compacted lime rock base course and asphaltic within the specified working limits. Municipal agencies permitting this work may accelerate the time for removal of the cold mix, at their discretion.

D. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all work shall be completed in sections compatible with specified traffic maintenance procedures.

E. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement, to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed over properly compacted lime rock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of Type I paving restoration.

F. Sand seal on the lime rock base course will not be permitted in lieu of temporary paving.

G. Unless otherwise approved by the City, temporary paving, shall be placed within twenty-four hours following the completion of backfilling.

3.0.3. TYPE I PAVING REPAIR (LIMEROCK BASE - ASPHALTIC CONCRETE SURFACE)

A. Type I paving repairs shall be made with an 8-inch thick compacted lime rock base and a minimum 1-inch thick asphaltic concrete surface, as detailed in the Standard Details. On Public Works roads asphaltic concrete shall have a compacted thickness of 2-inch, placed in a minimum of two (2) compacted 1-inch lifts.

B. Limerock for pavement base shall be Miami limerock obtained from local sources where the overburden was removed from the pits prior to mining operations. The limerock shall comply with the requirements of FDOT Specifications, Section 911.

C. The backfill previously placed and compacted shall be excavated to the required depth below the existing road surface and the existing paving shall be cut back beyond all excavations, using an abrasive disc saw to trim the edges to straight and true lines, minimum width for the lime rock base shall be equal to the trench width plus 2 feet. Eight inches of lime rock base shall be placed in two layers, each layer compacted to not less than ninety-eight percent (98%) density in accordance with Section 200 of FDOT Specifications. During rolling, the base shall be wetted down, as necessary, to secure the greatest possible compaction. After rolling, the entire surface of the base shall be thoroughly scarified to a depth of not less than 3 inches and shaped to conform to and be parallel with the existing surface, then watered and rolled again. Rolling and watering shall continue until the entire depth of the base is bonded and compacted into an unyielding mass.

D. If at any time the subgrade material becomes mixed with the lime rock base course materials, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean rock which shall be watered and rolled until satisfactorily compacted.

E. After the lime rock base course has been properly prepared and is dry and ready to receive the wearing surface, a tack coat of emulsified asphalt, in accordance with

Section 02741, shall be applied at a rate of 0.10 gallon per square yard, immediately followed by the asphaltic concrete. The tack coat shall be applied to the entire lime rock base uniformly, and shall thoroughly coat all surfaced. Care shall be taken to tack coat and bond the edge of surrounding pavement.

F. The asphaltic concrete shall be plant mixed, using the best grade of local aggregates of approved size and gradation and mixed with an approved binder and conforming the either the State of Florida Department of Transportation Specifications, Type S-1 Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications, or Miami Dade County Public Works Type I, as ordered by the Engineer of Record.

G. Where the width of the repair permits, the asphaltic concrete plant mix material shall be placed by means of an approved mechanical spreader and finisher. The mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than eight tons. The compacted asphaltic concrete mixture shall not be, in any case, less than one inch in thickness. Rolling shall proceed as closely behind the spreader as possible and all material shall be completely compacted the same day it is placed. The minimum width of the wearing surface shall be the same as the base.

3.0.4. TYPE IV PAVING REPAIRS (CONCRETE SLAB – RIGID PAVEMENT)

A. Type IV repairs will be used when the restoration work falls within the limits of existing rigid pavement.

B. Paving repairs shall be similar to Type III paving repairs except that No. 4 reinforcing steel bars spaced 12 inches on centers both ways shall be substituted for the mesh reinforcement, and the slab shall be 8 inches thick instead of 6 inches, with the top of the concrete matching the elevation and finish of the existing pavement. The asphaltic concrete surface course is not required.

3.0.5. TYPE V PAVING REPAIRS (ASPHALTIC CONCRETE WEARING SURFACE OVERLAY)

A. Type V paving repairs shall be made where noted on the plans and/or as ordered by the Engineer or Record. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs, as specified hereinabove. As used herein, "overlay" shall mean Type V paving repairs. A special wearing surface may be substituted, if required.

B. In general, the overlay shall be applied in a full lane width or widths, after the permanent paving repairs over the trench have been made. Type V is usually in addition to required Type I repairs. Since the quantity of Type V repairs that may be required is usually unknown until pavement restoration work begins, Type V repairs may be established in the Proposal on a contingent basis.

C. All longitudinal and transverse asphalt replacement overlay wearing surfaces shall butt into adjacent existing asphalt wearing surfaces in full lane asphaltic pavement restoration. The finish elevation of the new full lane overlay shall meet existing elevations adjacent to the new work.

D. The existing asphaltic concrete surface shall be saw cut for its full depth or 1-inch minimum, and then stripped back for at least 2 feet into the area to be overlaid to a second cut which shall also be in clean straight lines. The second, or interior, cut edge shall be rolled with a tandem roller weighing not less than 8 tons before the overlay is applied. The stripped area shall be used to provide a smooth transition or "feather" area between the overlay and the existing pavement. Before placing the overlay, all cut edges and the surface of the stripped area shall be tack coated with emulsified asphalt as specified herein below.

E. If the Contractor requests in writing to "feather" the longitudinal edge, and if written permission is granted to "feather" the asphalt by the City a sanded mix of 70-30 type shall be used. "Feathering" shall begin 18 inches from the tapered edge.

F. Prior to installing a full lane width overlay over existing asphaltic pavement the trench and shoulders over the pipe shall be sawcut and filled with asphaltic concrete to the required depth, terminating flush with the existing adjacent asphalt in accordance with the municipality having jurisdiction over the work for Types I, II or M. Type V overlay will be installed as detailed above.

G. When a minor amount of asphalt surface will remain, generally with large pipe installations, after the pipe has been installed and the required longitudinal saw cutting of the asphaltic pavement completed, the Contractor may request permission to remove all the asphalt in the lane, by saw cutting the asphalt adjacent to the existing lane, then placing the Type V overlay flush with the adjacent asphalt. This would require that the Type I, II or M finish elevation be lowered 1 inch to allow for the Type V overlay.

H. Before the overlay is applied, existing surfaces shall be swept clean of all dirt and debris, using a power driven broom if warranted by the size of the location to be overlaid and/or as ordered by the City. Pavement edges shall be cleared of all encroaching vegetation, loose sand, rock and all other foreign matter. When the existing surface is thoroughly clean, a tack coat of Emulsified Asphalt Grade RS-2 (anionic) shall be applied at the rate of approximately 0.10 gallon per square yard, immediately followed by the asphaltic concrete overlay.

I. Machine-laid overlay shall be placed by means of an approved mechanical spreader and finisher, and the mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than 8 tons.

J. The compacted overlay shall be thicker as required to produce a smooth uniform surface free of any irregularities but shall not be less than one inch in thickness. Existing depressed areas in the asphaltic pavement, which could collect water after a rainfall shall be corrected before placing the asphaltic overlay. Rolling shall proceed as close behind the spreading of the asphaltic overlay as possible, and all materials shall be completely compacted the same day it is placed.

3.0.6. SLURRY SEAL COAT

A. Slurry-seal repairs shall be made where ordered by the Engineer of Record or the City.

B. Before any material is laid, the existing surface shall be cleaned with brooms or power blowers. Vegetation which has overgrown the edges shall be removed. All cracks, potholes and depressions shall be brought up to grade with bituminous concrete skin patching.

C. A tack coat, if required, shall consist of emulsified asphalt SS-1h, diluted with 3 parts of water, sprayed and squeegeed or broomed at a rate of 0.1 to 0.2 gallons per square yard.

D. A minimum thickness of 1/8-inch to a maximum of 1/4-inch of slurry mix shall be spread by a drag distributor at a maximum rate of 180 feet per minute. Any ridges or surplus material shall be smoothed by hand squeegee. The pavement shall be kept damp with a fog spray just ahead of the machine.

E. A second coat shall not be applied to, nor traffic permitted to drive upon, the first application until it has thoroughly dried. (A dry condition is such that an automobile tire track does not show after driving on the surface).

3.0.7. ASPHALT COLD MILLING

A. Cold milling of the existing pavement for a 1-inch depth shall be done by using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final

B. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above.

C. The required width of 1-inch thick asphaltic concrete wearing surface of the specified wearing course shall be applied in accordance with the above specifications.

D. The Contractor shall perform asphalt cold milling where called for on the plans or as required for a complete installation, when approved or requested by the City. Cold milling shall be done using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the City and governing agency having jurisdiction at the location of the pavement milling operation. All charges for maintenance of traffic, transportation of personnel, equipment and other mobilization charges shall be considered as incidental to the cold milling operation.

E. Cold asphalt milling shall be provided to improve the rideability of the finished pavement, lower the finished grade adjacent to an existing curb prior to resurfacing or to completely remove existing pavement. The overall length of the milling machine (excluding the conveyor) shall be a minimum of 18 feet, and having a minimum cutting width of six feet. The milling operation shall be operated to effectively minimize the amount of dust being emitted from the machine. Prewetting of the pavement may be required. In areas where milling is to be performed around the City utility structures such as manholes, valve boxes etc., proper caution shall be taken as not to damage any of the structures. Saw-cutting of the concrete surrounding the structure and using

a pick or other means so as not to disturb the structure shall be employed to prevent any damage. Prior to opening an area which has been milled to traffic, the pavement shall be thoroughly swept with a power broom or other approved equipment to remove to the greatest extent practicable, the fine material which will dust under traffic. This operation shall be conducted in a manner so as to minimize the potential for creating a traffic hazard and to minimize air pollution.

F. The milling operation shall be continuous so as to complete each site without any delays. All milling operations shall be coordinated by the City Inspector.

G. Traffic maintenance charges shall include the installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Dade County Public Works Manual. In addition, the Contractor shall provide all barricades, flashing warning lights and/or arrow boards necessary to maintain safety and warn motorists of the construction.

3.0.8. REPAIR OF DAMAGED PAVEMENT

A. All damage to pavement by the Contractor as a result of Work under this project shall comply with "DAMAGE BY CONTRACTOR", above, and shall be repaired in a manner satisfactory to the City. The repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

B. The width of all repairs within the work area shall extend at least 12 inches beyond the limit of the damage. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the work area shall be approved by the governing agencies having jurisdiction over the work prior to commencing the work.

3.0.9. CONCRETE PAVEMENT REPAIR

A. This type of repair shall be made only on Florida Department of Transportation roadways when the original pavement is concrete.

B. The existing pavement shall be saw cut in straight lines as outlined by the City at the location of the replacement. The pavement shall be removed and the fill shall be mechanically compacted to 98% of the maximum density obtainable as determined by AASHTO Standard T-180. The fill in the trench and shoulders shall be brought to a depth equal to the thickness of the existing concrete pavement, but not less than 8 inches in any case. The opening thus formed, shall be filled with concrete having a design strength of 5,000 psi and made with High Early Strength Cement. The concrete slab shall be reinforced with ½ inch steel reinforcing rods, 12 inches on center each way, placed 2 inches above the bottom of the slab. The surface of the slab shall be struck off with a screed and finished with a wood float and brush to conform to the grade and finish of the existing pavement. Apply liquid curing compound after initial set. The Contractor shall provide adequate means to protect the slab until it has cured sufficiently to withstand vehicular traffic without spalling or breaking apart. Construction joints and expansion joints in the original pavement shall be reproduced

in the repair with matching materials.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section consists of pavement markings and traffic signs on the Drawings, specified herein and as required for a complete installation.

1.0.2. QUALITY ASSURANCE

A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

B. Pavement markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced in kind to the satisfaction of the Dade County Department of Public Works, Traffic Engineering Division, or other authority having jurisdiction over the work area.

1.0.3. CERTIFICATION

The Contractor shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at his expense all signs that fail to meet this requirement.

PART 2 – PRODUCTS

2.0.1. PAVEMENT MARKING

Paint for pavement strips shall be as specified in Part 3, Execution

2.0.2. REFLECTIVE MARKERS

Reflective markers shall be installed in the pavement in accordance with OSHA, DOT and Dade County Public Works requirements.

2.0.3. TRAFFIC SIGNS

A. General: Traffic regulating signs shall conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices (ANSI) and displaying the lettering and symbols indicated on the Drawings.

B. Sign Panels and Support Members: Sign panels and support members shall conform to Aluminum Association Alloy 6061-T6.

C. Bolts: Bolts shall conform to Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002-inches thick minimum and chromate sealed.

D. Nuts: Nuts shall conform to Aluminum Association Alloy 6269-T9.

E. Reflective Sheeting: Reflective sheeting shall conform to DOT Type A requirements.

F. Construction Warning Signs: The CONTRACTOR shall install traffic and warning signs during construction in accordance with OSHA, DOT and Dade County Public Works requirements.

PART 3 – EXECUTION

3.0.1. TRAFFIC PAINT

A. This type of pavement painting shall be used where no thermoplastic paint is required or as temporary paint during the time required for paving "cure" prior to application of thermoplastic paint markings.

B. Traffic paint used for this work shall conform with the requirements of Section 971-12 of the Florida Department of Transportation Standard Specifications for Road and bridge Construction, or, at the Contractor's option, fast dry traffic paint, as specified in D.O.T. Specifications, Section 971-13, may be used.

C. The colors of the paint shall be yellow or white, as existed before the repair.

D. All equipment shall be of a type and design which will readily produce the required uniformity of application of the stripes, both as to thickness of coating and alignment. The paint machine shall be of the spray type, capable of spraying the paint to the required "spread" without thinning of the paint. The paint tank shall be equipped with a mechanical agitator. The nozzle shall have cut-off valves which will apply broken or "skip" lines automatically. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.

E. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset. No paint shall be applied when moisture is present on the surface to be painted or when the air temperature is below 40 degrees F. Painting shall not be done when winds are sufficient to cause spray dust.

F. The surface which is to be painted shall be cleaned by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or soil shall be removed from the pavement before edge striping is begun.

G. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint will be allowed at any time. Before the start of each day's work, the paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

H. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips. Any stripes which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.

I. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires. While the center line stripes are being painted, all traffic shall be routed away from the painting operations and the newly painted stripe. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.

J. Any portions of the stripes damaged by passing traffic or from other causes shall be repainted.

K. Paint for temporary pavement markings shall also be used where thermoplastic markings are to be applied after the asphaltic concrete has "cured." The cure time shall be based on thermoplastic manufacturer's recommendations. However, in accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

3.0.2. THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

A. Thermoplastic pavement markings, including stripes, pavement messages, stop bars, directional arrows, reflective pavement markers and other miscellaneous items, shall be replaced as existed before the repair was made. The thermoplastic compound shall be extruded or sprayed onto the pavement surface in a molten state by mechanical means, with surface application of glass spheres, when required. Upon cooling to ambient pavement temperature, the compound shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation.

B. The colors of the compound shall be white or yellow, as existed before the repair.

C. Where thermoplastic markings are to be applied to concrete pavement, a sealing primer, as specified in F.D.O.T. Specifications Section 711-2.2, shall be applied in advance of the placing of the stripes.

D. The thermoplastic shall be applied to the pavement utilizing either extrusion or spray application equipment. The application equipment shall be so constructed as to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die or gun shall be so constructed as to prevent accumulation and clogging. The equipment shall be

constructed so that all mixing and conveying parts up to and including the shaping die or gun, maintain the material at the plastic temperature with heat transfer oil or electrical element controlled heat. Direct fire heat transfer will not be allowed.

E. The application equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off square stripe ends and shall provide a method of applying "skip" lines. The use of pans, aprons, or similar appliances which the die overruns will not be permitted.

F. Glass spheres applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.

G. Special kettle(s) shall be provided for melting and heating the thermoplastic material. The kettle(s) shall be equipped with automatic thermostatic control devises to provide uniform temperature control and prevent overheating of the material. The applicator and kettle(s) shall be equipped and arranged as to satisfy the requirements of the National Fire Underwriters, the State of Florida, Dade County and any municipal authority applicable to where the work is being done.

H. Applicators shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The applicator equipment to be used on roadway installations shall consist of either hand equipment or truck mounted units depending on the type of marking required.

I. The hand applicator equipment shall be insulated, have sufficient capacity to hold 150 pounds of molten material, and be sufficiently maneuverable to install crosswalks; lane, edge and center lines; arrows and legends.

J. The truck mounted unit for lane, edge and center lines shall consist of a mobile selfcontained unit carrying its own material capable of operating at a minimum speed of five miles per hour while installing striping.

K. Application time, weather limitations and surface preparation shall be in accordance with F.D.O.T. Specifications Sections 710-4, 710-5 and 710-8. In accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

L. The material, when formed into traffic stripes or other markings, shall be readily renewable by placing an overlay of new material directly over an old line of compatible material in such a manner that no splitting or separation takes place.

M. The application temperature shall be within the range specified by the manufacturer of the thermoplastic compound being used.

N. All pavement edge lines, gore, island and diagonal strip markings, bike lane symbols and messages, wherever located, shall have a minimum thickness of 0.060 inch at the

edges and a maximum thickness of 0.120 inch at the center. A minimum average film thickness of 0.060 inch shall be maintained. All lane lines, center lines, transverse markings (except shoulder markings) and pavement markings within traffic wearing area (such as dotted turning guide lines) shall have a minimum thickness of 0.090 inch at the edges and a maximum thickness of 0.188 inch at the center. A minimum average film thickness of 0.090 shall be maintained. All thickness measurements shall be an average in any three foot length.

O. The glass sphere top coating shall be applied by a type of glass sphere dispenser or gun which will embed the spheres into the line surface to at least one-half their diameter. The glass sphere top coating shall not incur more than a 10 percent loss during the first 30 days of traffic exposure.

P. Reflective pavement markers shall be installed as they existed before the repair. They shall be replaced with the appropriate color or colors and oriented in the correct direction as specified in Section 706 of the F.D.O.T. Specifications. Paving markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, as revised by the governing agency.

3.0.3. FABRICATION

Preparation of sign blanks and fabrication of reflectorized faces shall conform to the applicable requirements of DOT Sections 700-4 and 700-5.

END OF SECTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Work included in this Section includes tree removal, tree relocations, furnishing and planting trees, plants and grass of the species, sizes and quality specified, fertilizing, watering, maintaining plants, guarantee and obtaining all permits from municipalities having jurisdiction over this work.

B. The schedule of trees and plants, if applicable, is shown on the drawing, and indicates the common and botanical names, the quantities and sizes of plants to be used.

C. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf with well developed root systems free of disease and insects, pests, eggs or larvae. No plants will be accepted unless healthy and showing satisfactory foliage conditions.

1.0.2. Solid sod and grass submittal to be submitted to the Engineer or Record for approval prior to installation.

PART 2 - PRODUCTS

2.0.1. GRASSING, SOLID SOD AND SEED:

A. General:

1. Solid sod shall be planted in the unpaved areas abutting the structures and extending to the limits shown on the Plans.

2. Grass seeding: All other unpaved areas shall be planted with grass seed and mulched.

3. When solid sod or grass seed is to be placed adjacent to or in close proximity to existing sod or grass, the Contractor is to use similar sod or grass and obtain approval from the Engineer of Record prior to installation. In public areas and right-of-ways the Contractor is also required to comply with Governmental Agency requirements and provide the City with written approval of said agency prior to installation of grass and sod.

B. Materials:

1. Solid Sod:

a. Solid sod shall be certified bitter blue St. Augustine Floratam. The sod shall be firm touch texture having a compact growth of grass with good root development. It shall contain no weeds or other objectionable vegetation.

b. The soil embedded in the sod shall be good clean earth, free from stones and other debris. The sod shall be free from fungus, vermin and other diseases. The sod and soil shall be approximately 2" thick.

c. Before being cut and lifted, the sod shall have been mowed at least three times with a lawn mower, with the final mowing not more than seven days before the sod is cut. The sod shall be cut into uniform dimensions approximately 12" X 24". Abutting joints shall be free of open spaces with a tamped or rolled surface so that there are no joint openings.

2. Topsoil: Soil utilized for planting grasses shall be a mixture of pulverized 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps or other impurities or debris. All soil shall be delivered in a loose friable condition. Topsoil may be "unsuitable top soil" removed during the course of other work hereunder, if approved by the Engineer of Record. Topsoil shall be free of undesirable plants and seeds. Any such plants sprouting from areas of recent topsoil application shall be presumed to have originated in the topsoil and shall be eradicated from the area by the Contractor at his expense. Means of eradication shall be submitted to the Engineer of Record for approval.

C. Planting of Grassing:

1. Solid Sod: Unless otherwise directed by the Engineer, four inches of topsoil shall be placed. The ground area shall be saturated with water. Sod shall be placed on the graded and watered ground firmly butted on all sides by sod without leaving holes, slots, or depressions. Sod shall be top dressed with soil (herein before specified) where required to bring all fill to voids and provide a uniform grass matt if approved by the Engineer of Record. Soil shall firmly abut all structures to which it surrounds or contacts. Immediately after the grassing process, the entire grassed or mulched area shall be rolled thoroughly with a cultipacker traffic approved roller, or other 1,000 pound roller. At least two trips over the entire area will be required.

2. Grass Seeding: As above, place four inches of topsoil and saturate with water. Thereafter seed and mulch

D. Fertilizing Grassing:

1. Commercial fertilizers shall comply with all Federal, State and County fertilizer laws.

2. The numeral designations for fertilizer indicate the minimum percentage (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water soluble potash, contained in the fertilizer.

3. Designations may be approved specifically for a particular project and if liquid fertilizer other than that of chemical designation 8-8-8 is used, the total nitrogen content shall not exceed 12 percent.

4. At the Contractor's option liquid or dry fertilizer may be used. All grass shall be fertilized and watered in during the planting operation using the application rate and method directed by the manufacturer of the fertilizer used.

E. Guarantee and Maintenance of Grassing:

1. Guarantee:

a. The Contractor shall guarantee all grasses for a period of six months from the date of acceptance of the completed overall project from the Contractor.

b. The Contractor shall guarantee the grasses shall be alive, free of disease and have a healthy appearance at the end of the guarantee period.

c. During the guarantee period, the Contractor shall replace any grass which is diseased, dead or visually unsightly within 3 days when requested in writing.

2. Maintenance:

a. The Contractor shall maintain all grass guaranteed above for the period of the guarantee. Such maintenance shall include filling, leveling, and repairing eroded areas, replanting areas where the establishment of the grass does not develop satisfactorily, and watering as required. In no case shall such maintenance be less than 3 weeks for watering and 6 weeks for remaining maintenance care.

b. The maintenance of the grass shall include, regular mowing, one application of approved dry or liquid fertilizer to the grasses guaranteed above. The fertilizer shall be applied and watered in as directed by the manufacturer. The time of fertilizing shall be approved.

c. The Contractor shall be required under the maintenance of the guaranteed grasses to safeguard and take all possible precautions against damage from the elements and other possible damage. The Contractor shall be required to clean up the effected landscape area during the maintenance period due to any such event. The Contractor shall not be responsible to replace grasses properly protected under this item of the specifications, damaged by the events beyond his control.

2.0.2. PLANTS AND TREES: (If required by relocation and if shown on the drawings)

A. Grade Standards and Quality:

1. Quality of all plants shall be at least equal to that defined as No. 1 by the State Plant Board of Florida in Grades and Standards for Nursery Plants, Part I, 1963 Revised Edition, and Part II, Palms and Trees.

2. All plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall have healthy, well developed root systems and shall be free of disease and insect pests, eggs or larvae.

3. No plants will be accepted unless they are healthy and show satisfactory foliage conditions.

4. All plants shall conform to the measurements specified or indicated on the Drawings except that up to 10 percent of undersized plants in any one variety or grade may be used provided there are sufficient oversized plants to make the average equal to or above specified grade. Plants larger than specified may be used if approved by the Engineer of Record, but use of such plants shall not increase the Contract price. The spread of roots or ball of earth for larger plants shall be increased in proportion to the size of the plant.

B. Plant Designation: With reference to method of cultivation, root system status, etc., plants for landscaping shall be classified under the following designations:

1. Balled and Burlapped:

a. Plants so classified shall be dug with firm natural root balls of earth, of sufficient diameter and depth to include most of the fibrous roots. The root ball of these plants shall be properly wrapped with burlap sack material and remain protected and moist until they are planted. Plants whose burlapped balls have cracked or become sagging, or plants showing scars from rope and cable marks or other improper handling are not acceptable. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet moss, or other acceptable material. The plants shall be set with the burlap cover intact and with the burlap showing, until inspection. At final inspection, the burlap may be cut away to ground level and completely covered with soil.

b. It is required that, balled and burlapped materials, 1½ inches or more in caliper, shall be root-pruned at least 45 days before being dug and such fact shall be certified on accompanying invoices. Where, in the opinion of the Engineer of Record following his inspection of the grower's stock, adequate root pruning is being obtained by the grower's general cultivating practices, he may consider such fact as meeting this requirement.

2. Wire Balled and Burlapped:

    a. Plants grown in soil of a loose texture which does not readily adhere to the root system shall have sound hog wire placed around the burlapped ball before the plant is removed from the excavation. The wire shall be looped and tensioned until the burlapped ball is substantially packaged so as to prevent loosening of the soil around the roots during handling.

    b. Wire balled and burlapped plants shall otherwise comply with the requirements for balled and burlapped plants described in 1 above.

3. Container Grown Plants:

    a. Container grown plants shall have been grown in a container large enough and for sufficient time for the root system to have developed well enough to hold its soil together firm and whole. No plants shall be loose in the container. Plants which have become pot bound or for which the top system is too large for the size of the container, will not be acceptable.

    b. All containers with vertical sides shall be cut and opened fully, in a manner such as will not damage the root system. Container grown plants shall not be removed from the container until immediately before planting, when all due care shall be taken to prevent damage to the root system.

4. Bare-Root Plants: No bare-root plants shall be used unless specifically required by the Engineer of Record or called for on the drawings.

5. Palms:

    a. Palm species shall have the roots adequately wrapped before transplanting except when they are container grown. Burlapping will not be required if the palm is carefully dug from marl or heavy soil that it adheres to the roots and retains its shape without crumbling. During transporting and after arrival, root balls of palm shall be carefully protected from the wind and exposure to the sun. After delivery to the job site, if palm is not planted within 24 hours, the root ball shall be covered with a moist material.

    b. All moving of sabal, coconut and royal palms shall be in accordance with Heavy Trunk Palms, as described in "Florida Grades and Standards for Nursery Plants, Part II".

6. Rooted Cuttings: Cuttings shall be kept moist at all times. They shall be rooted in a medium other than wood shavings and have at least 4 root tips of ½-inch or longer.

C. Transportation and Inspection:

1. Plant transportation shall comply with all Federal and State regulations therefor and, upon delivery at the site, all plants shall be inspected for conformity to specifications and for handling damage. Rejected plants shall be removed immediately from the site by the Contractor.

2. Foliage trees when moved in full leaf shall be treated with "Wilt Pruf" or "Plantguard", as they are loaded at their growing site. This material shall be applied to the entire tree with a fine spray at a dilution of 1 part "Wilt Pruf" or "Plantguard" to 15 parts of water.

3. Trees which have to be transported in excess of 10 miles to reach the job site, shall be covered with a 70 percent shade-cloth-tarp, or equal in order to prevent wind burn.

4. Immediately following the delivery and inspection at the job, all plants with exposed roots shall be heeled-in moist soil or peat moss. All plants heeled-in shall be properly maintained by the Contractor until planted.

5. The balls of balled and burlap plants, must, if not immediately planted after delivery and inspection, be adequately protected by covering until removed for planting, in a manner appropriate to prevailing conditions and in accordance with accepted horticultural practices. The Contractor shall, in loading, unloading, or handling of plants, exercise utmost care to prevent injuries to the branches or roots of the plants. The solidity of the ball of balled and burlapped plants shall be carefully preserved. Handling of the plant by parts other than the ball shall be cause for rejection of such plant. Bare root plants which have been heeled-in shall be properly handled during the distribution of planting beds.

D. Planting Materials:

1. Planting Soil: Planting soil shall be a pulverized mixture of 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps, or other impurities or debris. All soil shall be delivered in a loose friable condition.

2. Fertilizer:

   a. Fertilizer shall be as specified in subsection 2.01-D, herein.

   b. Fertilizer shall be selected and used as recommended by the manufacturer for each particular plant.

3. Mulch: Mulch shall be ground bark, bark peelings, peat, hay or straw. Cypress mulch shall not be used because its harvest degrades cypress wetlands.

4. Anti-Desiccant: Anti-desiccant shall be "Wilt Pruf", "Plantguard", or equal, delivered in the manufacturer's containers and used in accordance with the manufacturer's instructions.

5. Water:

   a. Water for the irrigation of the new plantings during the progress of construction shall be provided by the Contractor in accordance with the provisions previously specified.

   b. The Contractor shall furnish adequate watering equipment and shall continue watering to properly establish the new plantings throughout the maintenance period.

6. Wire: Wire for the bracing and guying shall be pliable No. 12 or No. 14 gauge galvanized soft steel wire.

7. Stakes and Ties: Stakes and ties shall be provided in accordance with the requirements of PART 3 EXECUTION, below.

PART 3 - EXECUTION

3.0.1. EXCAVATION OF PLANT HOLES:

A. Plant hole excavations shall be roughly cylindrical in shape, with the sides approximately vertical. Plants shall be centered in the hole, with the trunk location as shown in the Plans.

B. Bottoms of the holes shall be loosened at least 6-inches deeper than the required depth of excavation.

C. Holes for balled and burlapped and wire balled and burlapped plants shall be large enough to allow at least 8-inches of backfill around the earth ball. For root balls over 18-inches in diameter, this dimension shall be increased to 12-inches.

D. Where excess material has been excavated from the plant hole, the excavated material shall be disposed of as and where directed by the Engineer of Record.

E. PREPARATION OF GROUND

   1. Four inches minimum thickness of topsoil shall be placed over the areas off the right of way on which the sod is to be placed.

F. APPLICATION OF FERTILIZER

1. Before applying fertilizer, the soil pH shall be brought to a minimum range of 6.0 - 7.0.

2. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 500 pounds per acre, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4-inches.

3. On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2-inches.

G. PLACING SOD

1. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools. Sod areas abutting concrete, asphalt or other applicable surfaces shall have the soil depressed at edges of the pavements so that the cut grass does not protrude over 2-inches above the adjacent property.

2. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

3. On steep slopes, the Contractor shall, if so directed by the Engineer of Record, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.

4. Sod which has been cut for more than 72 hours shall not be used unless specifically authorized by the Engineer of Record after his inspection thereof. Sod which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

5. Sodding shall not be performed when weather and soil conditions are, in the Engineer of Record's opinion, unsuitable for proper results.

H. WATERING

1. The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer of Record, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod

roots and starts to grow for a minimum of 60 days (or until final acceptance whichever is latest).

3.0.2. UNDERGROUND OBSTRUCTIONS:

A. In the event that rock, underground construction work, utility lines or obstructions out of the ordinary are encountered in any plant hole excavation, alternative locations will be selected by the Engineer of Record.

B. Where locations cannot be changed and the obstructions may be removed, the obstructions shall be removed to a depth of not less than 3-feet below grade and not less than 6-inches below bottom of balls or roots when plant is properly set at the required grade.

3.0.3. SETTING OF PLANTS:

A. When lowered into the hole, the plant shall rest on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance. The Contractor, when setting plants in holes, shall make allowances for any anticipated settling of the plants.

B. The backfill shall be made with planting mixture as specified hereinbefore and shall be firmly rodded and watered-in, so that no air pockets remain. The quantity of water applied immediately upon planting shall be sufficient to thoroughly moisten all the backfilled earth. Plants shall be kept in a moistened condition for the duration of the Contract.

3.0.4. STAKING AND GUYING:

A. When called for on the Drawings or directed by the City, plants shall be staked in accordance with the following provisions:

1. Small Trees: For trees and shrubs of less than 1-inch caliper, the size of stakes and the method of tying shall be such as to rigidly support the staked plant against damage caused by wind action or other effects. Trees larger than 1-inch and smaller than 1½ inch caliper shall be staked with a 2-inch square stake driven at least 24-inches in the ground and extending to the crown of the plant. The plant shall be firmly fastened to the stake with two strands of 14 gauge soft wire, enclosed in rubber hose, or other approved covering. The wire shall then be nailed or stapled to the stake to prevent slippage.

2. Medium Trees: All trees, other than palm trees, larger than 1½-inch caliper and smaller than 2½-inch caliper shall be staked with two or more, 2-inch by 2-inch stakes, 8-feet long, set 2-feet in the ground. The tree shall be midway between the stakes and held firmly in place by two strands of 12 gauge wire, applied as specified above for single stakes. Tie wires shall be tightened and kept tight by twisting.

3. Large Trees: All trees, other palm trees, larger than 2½-inch caliper, shall be guyed from at least 3 points with double strands of 12 gauge wire. Guy wires shall be anchored to 2-inch by 4-inch stakes, 24-inches long, driven into the ground at least 2-feet and sufficient that the top of the stake is at least 3 inches below the finished ground level. In firm rock soils, No. 4 steel reinforcing rods or ½-inch pipe may be used instead of 2 by 4's. Tie wires shall be securely fastened to the tree by means of a collar of rubber hose, or other approved material. Guy wires shall be tightened and kept tight by twisting.

4. Palm Trees: Brace palm trees with three or more 2-inch by 4-inch wood braces, toenailed to cleats which are securely banded at two points to the palm, at a point at least 6-feet above the ground. The trunk shall be padded with five layers of burlap under the cleats. Braces shall be approximately equidistantly spaced and secured underground with 2-inch by 4-inch by 24-inch stake pads. In firm rocky soils, No. 4 steel reinforcing rods or ½-inch pipe is acceptable.

3.0.5. PRUNING:

All broken or damaged roots shall be cut off smoothly and the tops of all trees shall be pruned in a manner complying with standard horticultural practice. At the time pruning is completed, all remaining wood shall be alive. All cut surfaces of 1-inch or more in diameter, above the ground, shall be treated with an approved commercial tree paint.

3.0.6. MULCHING:

Within one week after the planting, mulch material, approved by the Engineer of Record, shall be uniformly applied to a minimum thickness of 2-inches, over the entire area of the backfilled hole or bed. The mulch shall be maintained continuously in place until the time of final inspection. Mulch is not required if other ground surface covers, such as rooted cuttings are called in the Plans.

3.0.7. INSPECTION:

On completion of the work, the Engineer of Record will inspect all planting work. The Contractor shall repair or replace all defective work, whichever is unsatisfactory to the Engineer of Record or the City. Preliminary acceptance of all plant materials will be given only after the materials are planted and after meeting all requirements prescribed herein.

3.0.8. MAINTENANCE:

A. Maintenance shall begin immediately after each plant is planted and shall continue until all work under this Contract has been completed and final acceptance is obtained from the City, however, the minimum period of this maintenance shall not be less than 60 days even if it extends beyond final acceptance of contract. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and

protected. Settled plants shall be reset to proper grade position, planting saucer restored and dead material removed. Guys shall be tightened and repaired.

B. Defective work shall be corrected as soon as possible after it becomes apparent. Upon completion of planting, the Contractor shall remove from the site excess soil and debris, and repair any damage to structures, etc., resulting from planting operations.

3.0.9. GUARANTEE:

The Contractor shall guarantee all planting work for a period of six months after the date of final acceptance. During the guarantee period, the Contractor shall replace at no cost to the City any plant that dies or is not established within the guarantee period. Any plants missing or defective shall be furnished or replaced in a manner satisfactory to the City.

END OF SECTION

DIVISION 3 – CONCRETE

03300 CAST-IN-PLACE CONCRETE, REINFORCING AND FORMWORK

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide all labor, materials, equipment, fabrication, incidentals, transportation, placing and supervision necessary to complete all cast-in-place concrete work, its finishing, and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation.

B. Work affecting this Section includes, but is not limited to:

1. Shop Drawings-Per General Conditions and as specified herein.
2. Materials and storage thereof.
3. Reinforcing-Bar and fabric.
4. Accessories of every nature, including form tie system.
5. Formwork and removal thereof, including shoring and reshoring.
6. Concrete proportions and mixes.
7. Placing of concrete.
8. Admixtures.
9. Joints, metal joint screeds and joint fillers.
10. Finishes of all types.
11. Protection and curing.
12. Patching.
13. Laboratory Testing.

1.0.2. QUALITY ASSURANCE

A. Unless otherwise indicated, all materials, workmanship and practices shall conform to the requirements of ACI 301-96 "Specifications for Structural Concrete for Buildings", except as modified by supplemental requirements hereinafter.

B. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

C. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

D. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

1.0.3. STANDARDS

A. ACI 301-96 Specifications for Structural Concrete.

B. ACI 318-95 Building Code Requirements for Reinforced Concrete.

C. Florida Building Code, latest edition.

D. ACI 117-90 Standard Specifications for Tolerances for Concrete Construction and Materials

PART 2 – PRODUCTS

2.0.1. GENERAL

C. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

D. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

2.0.2. CEMENT

G. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

H. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

I. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

J. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

K. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected.

2.0.3. FLY ASH

A. If fly ash is used as supplementary cementitious material, it shall meet the physical and chemical requirements of ASTM C618 Class F, except that the loss of ignition shall not exceed 4%. Sampling and testing of fly ash shall follow the requirements of ASTM C311.

B. For Type A1 concrete as required for use in environmental engineering concrete structures, inclusion of fly ash or slag cement in the concrete mix is mandatory

2.0.4. SLAG CEMENT

Q. Slag cement shall meet the requirements of ASTM C989 including tests for effectiveness of slag in preventing excessive expansion due to alkali-aggregate reactivity as described in Appendix X-3 of ASTM C989.

R. For Type A1 concrete as required for use in environmental concrete structures, i.e., process structures or fluid containing structures, inclusion of fly ash or slag cement in the concrete mix, is mandatory.

2.0.5. WATER

A. The water used in mixing the concrete shall be from potable water supplies that are approved by the Florida Department of Health.

2.0.6. AGGREGATES

A. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

B. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

C. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

D. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

E. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0.

F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

G. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.

2.0.7. ADMIXTURES

A. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

B. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

1. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

2. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured

and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are "Eucon 37" or Plastol 5000 by the Euclid Chemical Company, "Master Rheobuild 1000 or Master Glenium Series" by BASF, and "Daracem 100 or Advaflow Series" by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

3. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are "Accelguard 80/90 or NCA" by the Euclid Chemical Company and "Daraset" by W.R. Grace.

4. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

C. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

D. Portland cement and reinforcing steel: Comply with ACI 301 and, with all modifications and supplements thereto listed in Part 3 of this specifications.

2.0.8. CONCRETE MIX DESIGN

A. The proportions of cement, aggregates, admixtures, and water used in the concrete mixes shall be based on the results of field experience or preferably laboratory trial mixes in conformance with Section 5.3. "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318 and ACI 350. When trial mixes are used, they shall also conform to Article 3.01 of this Section of the Specifications. If field experience records are used, concrete strength results shall be from concrete mixed with all of the ingredients proposed for use on job used in similar proportions to mix proposed for use on job. Contractor shall submit verification confirming this stipulation has been followed. Field experience records and/or trial mix data used as the basis for the proposed concrete mix design shall be submitted to the City or their designee along with the proposed mix.

B. Structural concrete shall conform to the following requirements. Cementitious materials refer to the total combined weight of all cement, fly ash, and slag cement contained in the mix.

1. Compressive Strength (28 day)

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1	4,500 psi (minimum)
Concrete Class A2	4,000 psi (minimum)
Concrete Class B	3,000 psi (minimum)

2. Water/cementitious materials ratio, by weight

CONCRETE CLASS	MAXIMUM	MINIMUM
Concrete Class A1	0.42	0.39
Concrete Class A2	0.45	0.39
Concrete Class B	0.50	0.39

3. Slump Range

   a. 4" nominal unless high range water reducing admixture is used.

   b. 8” max if high range water reducing admixture is used

4. Air Content

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1, A2	6% ± 1.5%
Concrete Class B	3% Max (non air-entrained)

2.0.9. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Reinforcing of curbs and gutters shall be in accordance with City of Opa-Locka Public Works Manual Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways

2.0.10. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Curbs and gutters shall be in accordance with Miami Dade County or FDOT's Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways.

2.0.11. FORMS

A. Burlap mats: Conform to AASHTO Specification M182. (Burleen non-staining mats.)

B. Epoxy bonding agent: A two (2) component, solvent free, moisture insensitive structural epoxy adhesive conforming to ASTM C881 Type II, Sikadur 32 Hi-Mod, as manufactured by Sika Corp., Concresive 1090 Liquid by Master Builders or approved equal.

C. Anchor bolts, nuts and washers shall be American made 316 stainless steel.

D. Dovetail slots: Galvanized steel, 22 gauge, 1"x 1", with 5/8" throat, fiber filled.

E. Forms:

1. Plywood Forms: PS-1, B-B Concrete Form, Class I, exterior type, mill oiled and edge sealed. Thickness shall be as required to support concrete at the rate placed, but not less than 3/4".

2. Steel Forms: Uncoated steel, 3/16"-inch minimum thickness, fabricated to close tolerances, protected only by the specified release agent, braced so as not to dent, bend or dimple under wet concrete loads, vibrator impact and tool impact. Maintain steel forms in rust free condition by use of steel wool and light grinding, followed by coats of the specified release agent. Forms should be adjustable to be brought into true alignment without steps or ridges.

F. Form release agent:

1. For plywood forms use a natural non-petroleum base, non-staining and non-retarding release agent that will effectively prevent absorption of moisture and prevent bond with concrete and leaves the concrete with a paintable surface.

2. For steel forms, use an approved material that will not stain, color or otherwise affect the finish of the concrete. Form coating shall not be detectable on finished surfaces.

3. Round column forms: Provide seamless fiber forms with the three plies nearest to the interior surface of the form deckled or scarfed and overlapped to minimize spiral gaps or seams on the column surface.

G. Form Ties: Steel rod type with integral waterstops and cones, and with ends or end fasteners that can be removed without spalling the concrete and which leave a hole equal in depth to the required reinforcement clearance, but not less than 2 inches from the formed face of the concrete. Wire tie, banding wire and wood spreaders will not be permitted.

H. Form Inserts:

1. Bevel or chamfer strips: Wood or non-staining plastic, 3/4" wide on each leg at exposed edges of concrete members, unless otherwise noted on plans.

2. Tongue and Groove Joint Forms: Minimum 24 gauge with steel stakes and splice plates. Forms shall be designed for joints not to receive a poured seal.

3. Pipe hangers and other utility supports: AISI Type 316 stainless steel.

2.0.12. MORTAR

A. Standard premixed mortar conforming to ASTM C387, Type S, or proportion 1 part Portland cement to 2 parts clean, well-graded sand which will pass a 1/8-inch screen. Portland Cement shall conform ASTM C150.

B. Sand shall conform to AASHTO M45.

C. Admixtures may be used not exceeding the following percentages of weight of cement:

1. Hydrated lime: 10 percent

2. Diatomaceous earth or other inert materials: 5 percent.

D. Consistency of mortar shall be such that it will readily adhere to concrete

2.0.13. GROUT

A. Non-Shrink Grout: Non-shrink, non-metallic grout conforming to ASTM C 1107 Grade B or Grade C only. Grout must meet ASTM C 1107 at a temperature range of 50 F to 90 F at a flowable consistency. A minimum compressive strength of 5,000 pounds per square inch (psi) shall be obtained at 28 days.

B. Grout for Surface Repair and Bond Coat:

1. For repair, one part Portland cement to two parts fine sand, and a 50%of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent by Master Builders) to produce a stiff mortar.

2. For bond coat, one part Portland cement to one part sand, and a 50% of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent) to produce a slurry mix.

C. Moisture Barrier: Kraft paper and glass reinforcing fibers sandwiched between 2 layers of polyethylene film with a permeance rating of maximum 0.1 as per ASTM E-96, Procedure A.

D. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the non-extruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

Q. Joint Sealant Compound: Non-sag, 2 component, solvent free, moisture insensitive, flexible, epoxy resin conforming to the requirements ASTM C920-87 Type M, Grade NS. Additionally, the sealant must be recommended by the manufacturer to perform under continuous immersion in water.

R. Polyurethane Elastomeric Sealant: Sikaflex-2c, NS/SL or approved equal. Provide a 2- component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a non-sag and self-leveling consistency. Sealant shall meet ASTM C-920 and Federal Specifications TT-S-00227E.

1. Joint Movement: +50%.

S. Waterstops:

1. Polyvinyl chloride (PVC): Conforming to the requirements of U.S. Army Corps of Engineers Specification CRD-C-572 and of the following type:

a. Expansion Joints: 9-inches by 3/8-inch, ribbed center bulb.

b. Construction Joint: 9-inches by 3/8-inch, flat ribbed.

c. Only where specified on plans at construction and expansion joints: 9-inches by 3/8-inch, split ribbed.

2. Thermoplastic butt splices shall be performed using approved prefabricated pretested fittings; do not lap splice waterstops.

3. Waterstops for impermeable joints between prefabricated structures Non-hydro expansive based on bituminous resins to seal horizontal and vertical joints; hydrostatic load resistance 7 m column of water; not soluble in water; flashpoint 315degree Celsius ASTM D92; elongation capacity at 20 degree Celsius 230% compared to its initial dimension. Suitable for tunnels, water treatment plants, sewage, septic tanks, tanks, pipelines, sewer trunk lines and for any prefabricated concrete structure in general.

T. Fiber Reinforcement: Fiber reinforcement shall not be used in the concrete unless ordered buy the Engineer in writing. It shall consist of 100% virgin polypropylene fibrillated fiber dosage of 2 lbs. per cubic foot.

1. Compressive Strength: 1 psi (.006895 M Pa), ASTM C-39.

2. Flexural Strength: 288 psi (2.0 M Pa) after 7 days, 390 psi (2.7 M Pa) after 28 days; ASTM C-78.

3. Splitting Tensile Strength: 194 psi (1.3 M Pa) after 7 days, and 290 psi (2.0 M Pa) after 28 days; ASTM C-496.

4. Source: Fiber mesh Micro-Reinforcement System by Fiber mesh Company, Division of Synthetic Industries, Inc. Or approved equal.

U. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

V. A shrinkage reducing admixture (Teraguard) or equivalent at the rate of 2.2% by weight of cement may be used in the concrete to meet the shrinkage limitations.

W. To protect the concrete slab against the elements, the Engineer may direct the Contractor to spray an evaporation retarder on the finished concrete slab immediately behind the cement finishing process at no additional cost to the City. This is not a curing compound.

PART 3 – EXECUTION

3.0.1. READY MIX CONCRETE

A. Concrete obtained from a ready-mix plant shall conform to the requirements of these Specifications, and all applicable portions of ASTM C94 "Ready-Mixed Concrete".

3.0.2. MIXING AND DELIVERING CONCRETE

A. Produce a completely uniform mixed concrete in a truck mixer for 70 to 100 revolutions at the mixing speed designated by the truck manufacturer.

B. Prior to starting the discharge of the concrete at the jobsite, when water is added, record the added quantity and mix the concrete 30 additional drum mixing revolutions. Do not make more than two mix adjustments. Seek approval from the Engineer prior to using a central mixer and depositing the batch into a truck mixer.

C. Transit Time Using Agitator Trucks: The maximum allowable transit time between the initial introduction of water into the mix and completely discharging all the concrete from the truck will be 60 minutes. The maximum transit time can be 90 minutes if water reducing and retarding admixture (Type D, Type G, or Type II) is used. Reject concrete exceeding the maximum transit time.

D. All the concrete in a load must be in its final placement position a maximum of 15 minutes after the transit time has expired unless a time extension is approved by the Engineer.

E. Adding Water to Concrete at the Placement Site: Water may be added at the placement site provided the addition of water does not exceed the water to cementitious materials ratio as defined by the mix design. After adding water, perform a slump test to confirm the concrete is within the slump tolerance range stated in Section 2.01. If the slump is outside the tolerance range, reject the load. If an adjustment is made at the concrete production facility, perform a slump test on the next load to ensure the concrete is within the slump tolerance range. Do not place concrete represented by slump test results outside of the tolerance range. Include water missing from the water storage tanks upon arrival at the project site in the jobsite water added

3.0.3. PLACING CONCRETE

A. Weather Restrictions

1. Concreting in Cold Weather: Do not place concrete when the air temperature at placement is below 40ºF. The requirements of concreting in cold weather do not apply to precast concrete mixing and placement operations occurring in a temperature-controlled environment.

2. Concreting in Hot Weather: Hot weather concreting is defined as the production, placing, and curing of concrete when the concrete temperature at placing exceeds 85ºF but is less than 100ºF . Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85ºF at the time of placement. Concrete temperature shall be measured per ASTM C1064. Regardless of special measures taken, reject concrete exceeding 100ºF. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

B. Inspections Before Placing Concrete: Do not place concrete until the depth and character of the foundation and the adequacy of the forms and falsework have been

approved by the Engineer. Do not deposit any concrete until all reinforcement is in place and has been inspected and approved by the Engineer.

C. Exposure to Water: Do not expose concrete other than seal concrete in cofferdams to the action of water before final setting. Do not expose such concrete to the action of salt or brackish water for a period of seven days after placing the concrete. Protect the concrete during this period by keeping salt or brackish water pumped out of cofferdams.

D. Deposit concrete as nearly as possible in its final position. Do not deposit large quantities at one point and then run or work it along the forms. Take special care to fill each part of the forms, to work coarse aggregate back from the face, and to force concrete under and around reinforcing bars without displacing them.

E. Use a method and manner of placing concrete that avoids the possibility of segregation or separation of aggregates. If the Engineer determines that the quality of concrete as it reaches its final position is unsatisfactory, remove it and discontinue or adjust the method of placing until the Engineer determines that the quality of the concrete as placed is satisfactory.

F. Use metal or metal-lined open troughs, chutes, or other means of concrete conveyance which have no aluminum parts in contact with the concrete. As an exception, chutes made of aluminum for ready mixed concrete trucks, no longer than 20 feet, may be used. This exception does not apply to any other means of concrete conveyance. Where steep slopes are required, use chutes that are equipped with baffles or are in short lengths that reverse the direction of movement. Where placing operations would involve dropping the concrete freely more than 5 feet, deposit it through pipes, troughs, or chutes of sheet metal or other approved material. Use troughs, chutes, or pipes with a combined length of more than 30 feet only with the City''s authorization. Keep all troughs, chutes, and pipes clean and free from coatings of hardened concrete by thoroughly flushing them with water after each run or more often if necessary.

G. Place concrete against supporting material that is moist at the time of concrete placement. If additional water is required, uniformly apply it ahead of the concrete placement as directed by the Engineer. The Contractor may use a moisture barrier in lieu of controlling the foundation grade moisture when approved by the Engineer.

H. Place concrete in continuous horizontal layers, approximately 20 inches thick. To avoid obtaining a plane of separation or a cold joint between layers, vibrate the concrete.

I. Vibrate concrete to avoid honeycomb and voids, especially at construction joints, expansion joints, valleys, and ends of form sheets. Use approved pouring sequences.

J. Do not use calcium chloride or any other admixture containing chloride salts in the concrete.

K. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the Drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little re-handling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

L. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade, or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

M. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

N. Placing of concrete shall be so regulated that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.

O. All concrete for walls shall be placed through openings in the form spaced at frequent intervals or through tremies (heavy duct canvas, rubber, etc.), equipped with suitable hopper heads. Tremies shall be of variable lengths so the free fall shall not exceed five (5) feet and a sufficient number shall be placed in the form to ensure the concrete is kept level at all times.

P. When forms are removed, surfaces shall be even and dense, free from aggregate pockets or honeycomb. To achieve this, concrete shall be consolidated using mechanical vibration, supplemented by forking and spading by hand in the corners and angle of forms and along form surfaces while the concrete is plastic under the vibratory action. Consolidation shall conform to ACI 309.

Q. Care shall be taken to prevent cold joints when placing concrete in any portion of the work. The concrete placing rate shall be such as to ensure that each layer is placed while the previous layer is soft or plastic, so that the two layers can be made monolithic by penetration of the vibrators. Maximum thickness of concrete layers shall be 18 inches. The surface of the concrete shall be level whenever a run of concrete is stopped.

R. Placement in Wall Forms: Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of

canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing, and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in forms shall not exceed 5 feet of vertical rise per hour.

3.0.4. FORMWORK

A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The Contractor shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed and replaced at the Contractor 's expense. All design, construction, maintenance, preparation, and removal of forms shall be in accordance with the FBC, ACI 347 and the requirements specified herein.

B. All forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete.

C. Vertical Surfaces: All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for by the Engineer.

D. Construction Joints: Concrete construction joints will not be permitted at locations other than those shown or specified, except as may be acceptable to the Engineer. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete.

E. Form Ties: Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spilling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1 inch back from the formed face or faces of the concrete.

F. Careful procedures for the removal of forms shall be strictly followed, and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. Members which must support their own weight shall

not have their forms removed until they have attained at least 75 percent of the 28-day strength of the concrete as specified herein. Forms for all vertical walls and columns shall remain in place at least 2 days after the concrete has been placed. Forms for all parts of the Work not specifically mentioned herein shall remain in place for periods of time as determined by the City or their designee.

3.0.5. REINFORCING STEEL

A. Reinforcing steel shall be accurately formed to the dimensions and shapes shown on the Drawings, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings.

B. Bending or Straightening: Reinforcement shall not be straightened or rebent in a manner which will injure the material. Bars with kinks or bends not shown shall not be used. All bars shall be bent cold, unless otherwise permitted by the Engineer. No bars partially embedded in concrete shall be field-bent except as shown or specifically permitted by the Engineer.

C. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used, in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. All concrete blocks used to support reinforcing steel shall be tied to the steel with wire ties which are embedded in the blocks. For concrete over formwork, the Contractor shall furnish concrete, metal, plastic, or other acceptable bar chairs and spacers.

D. The portions of all accessories in contact with the formwork shall be made of concrete, plastic, or steel coated with a 1/8-inch minimum thickness of plastic which extends at least 1/2 inch from the concrete surface. Plastic shall be gray in color.

E. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

F. Bars additional to those shown which may be found necessary or desirable by the Contractor for the purpose of securing reinforcement in position shall be provided by the Contractor at its own expense.

G. Reinforcement placing tolerances shall be within the limits specified in ACI 318, unless otherwise directed by the Engineer.

H. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters having gray, plastic-coated standard type legs as specified herein. Slab bolsters shall be spaced not less than 30 inches on centers, shall extend continuously

across the entire width of the reinforcing mat, and shall support the reinforcing mat in the plane shown.

I. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3 feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into place in the freshly placed concrete shall not be used.

J. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the City or their designee.

K. Lap length for reinforcement bars shall be in a Class B Splice in accordance with ACI 318, unless otherwise shown. Laps of welded wire fabric shall be in accordance with the ACI 318.

L. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.

M. The surfaces of all reinforcing steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is a delay in depositing concrete, reinforcing shall be reinspected and, if necessary, recleaned.

3.0.6. PREPARATION OF SURFACES FOR CONCRETING

A. General: No concrete shall be placed until the reinforcement steel and formwork have been erected in a manner acceptable to the City or their designee. The Contractor shall notify the City or their designee not less than two working days prior to concrete placement, allowing for inspection and any corrective measures which are required. Earth surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the old concrete has been stopped or interrupted so that, as determined by the City or their designee, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bond. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by sandblasting, followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

C. Existing concrete surfaces upon or against which concrete is to be placed shall be given a roughened surface for good bond. Joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by Thydroblasting. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

D. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work, provided that construction joints shall be made only where acceptable to the City or their designee.

E. Embedded Items: No concrete shall be placed until all formwork, installation of parts to - be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the City or their designee at least 4 hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.

F. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the City or their designee before any concrete is placed. Accuracy of placement is the responsibility of the City or their designee.

G. Casting Against Old Concrete: Where concrete is to be cast against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro-blasting (exposing aggregate) prior to the application of an epoxy bonding agent. Application shall be according to the bonding agent manufacturer's instructions and recommendations.

H. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited under water nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete.

I. Openings for pipes, inserts for pipe hangers and brackets, and the setting of anchors shall, where practicable, be provided for during the placing of concrete.

J. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items, and any part of the concrete reinforcement will not be permitted.

K. Cleaning: The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.0.7. TAMPING AND VIBRATING

A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense homogeneous mass, filling all comers and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement. Vibrators shall be high speed power vibrators (8,000 or 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required.

B. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified with 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.0.8. FINISHING CONCRETE SURFACE

A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions shown on the Drawings are defined as tolerances and are specified herein. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.

B. Formed Surfaces: After removal of forms, the finishes described below shall be applied in accordance with Article 3.13, D. Unless the finish schedule specifies otherwise, all surfaces shall receive at least a Type I finish. The Engineer shall be the sole judge of acceptability of all concrete finish work.

1. Type I - Rough: All fins, burrs and other projections left by the forms shall be removed. All holes left by removal of ends of ties, and all other holes, depressions, or voids shall be filled solid with cement grout after first being thoroughly wetted. Honeycombs shall be chipped back to solid concrete as directed, prior to patching with cement grout. Holes shall be filled with a small tool that will permit packing the hole solidly with cement grout. Cement grout shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of cement grout shall match

the adjacent wall surface. At locations where concrete coatings are specified to be applied, epoxy-based patch material or filler surfaces compatible with the coating shall be used in lieu of cement grout specified herein. Concrete finish shall be in strict conformance to the coating / paint manufacturer's recommendations.

2. Type II - Grout Cleaned: Where this finish is required, it shall be applied after completion of Type I finish. After the concrete has been predampened, slurry consisting of one part cement (including an appropriate quantity of white cement in order to produce a color matching the surrounding concrete) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface with clean burlap pads or sponge rubber floats. Any surplus shall be removed by scraping and then rubbing with clean burlap. The finish shall be kept damp for at least 36 hours after application.

3. Type III - Smooth Rubbed: Where this finish is required, it shall be applied after the completion of the Type I finish. No rubbing shall be done before the concrete is thoroughly hardened and the mortar used for patching is firmly set. A smooth, uniform surface shall be obtained by wetting the surface and rubbing it with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities requires it, the general surface of the concrete shall not be cut into. Corners and edges shall be slightly rounded by the use of the carborundum stone. Brush finishing or painting with grout or neat cement will not be permitted.

C. Unformed Surfaces: The finishes described below shall be applied to unformed surfaces such as floors, slabs, flow channels and top of walls in accordance with Article 3.05 - Concrete Finish Schedule. The Engineer shall be the sole judge of acceptability of all such finish work.

1. Type "A" - Screeded: This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. When a Type "F" finish is subsequently to be applied, the surface of the screeded concrete shall be roughened with a concrete rake to ½" minimum deep grooves prior to final set.

2. Type "B" - Wood Floated: This finish shall be obtained after completion of a Type "A" finish by working a previously screeded surface with a wood float until the desired texture is reached. Floating shall begin when the water sheen has disappeared and when the concrete has sufficiently hardened so that a person's foot leaves only a slight imprint. If wet spots occur, water shall be removed with a squeegee. Care shall be taken to prevent the formation of laitance and excess water on the finished surface. The finished surface shall be true, even, and free from blemishes and other irregularities.

3. Type "C" - Cork Floated: This finish shall be similar to Type "B" but slightly smoother than that obtained with a wood float. It shall be obtained by power or band floating with cork floats.

4. Type "D" - Steel Troweled: This finish shall be obtained after completion of a Type "B" finish. When the concrete has hardened sufficiently to prevent excess fine material from working to the surface, the surface shall be compacted and smoothed with not less than two thorough and complete steel troweling operations. In areas, which are to receive a floor covering such as tile, resilient flooring, or carpeting, only one troweling operation is required. The finish shall be brought to a smooth, dense surface, free from defects and blemishes.

5. Type "E" - Broom or Belt: This finish shall provide the surface with a transverse scored texture by drawing a broom or burlap belt across the surface immediately after completion of a Type "B" finish.

6. Type "F" - Swept in Grout Topping: This finish shall be applied after a completion of a Type "A" finish. The concrete surface shall be properly cleaned, washed, and coated with a mixture of water and Portland Cement. Cement grout in accordance with Section 03315 shall then be plowed and swept into neat conformance with the blades or arms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention shall be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the Contractor shall notify the Engineer and the equipment manufacturer of the details of the operation and obtain approval and recommendations of the equipment manufacturer.

7. Type "G" - Hardened Finish: Either a liquid hardened finish or an aggregate hardened finish shall be provided at the Contractor's option.

8. Type "H" - Non-Slip Finish: This finish shall be provided by applying a non-slip shake-on aggregate concurrently with the application of a Type "D" finish. Application procedure shall be in accordance with manufacturer's instructions.

9. Type "J" - Raked Finish: This finish shall be provided by raking the surface as soon as the condition of the concrete permits by making depressions of +/-1/4-inch.

3.0.9. CONCRETE FINISH SCHEDULE

ITEM	TYPE OF FINISH
Inner face of walls of tanks, flow channels, wet wells, perimeter walls, and miscellaneous structures to be coated	I
Exterior concrete walls below grade	I
Exterior exposed concrete walls and columns (including top of wall) to one foot below grade. All other exposed concrete surfaces not specified elsewhere	II

All interior exposed concrete vertical surfaces in buildings	III
Interior exposed ceiling, including beams	III
Floors of process equipment tanks or basins, and slabs to receive roofing material or waterproof membranes	B
All interior finish floors of buildings and structures and walking surfaces which will be continuously or intermittently wet	C
All interior finish floors of buildings and structures which are not continuously or intermittently wet	D
Floors to receive tile, resilient flooring, or carpeting	D
Concrete in flow channels not specified to be coated	D
Exterior concrete sidewalks, steps, ramps, decks, slabs on grade and landings exposed to weather	E
Floors of process tanks indicated on Drawings or in the specifications to receive cement grout topping	F
Precast concrete form panels, hollow core planks, double tees	J

3.0.10. CURING AND DAMP PROOFING

A. All concrete shall be cured for not less than 14 days after placing, in accordance with the methods specified herein for the different parts of the work and described in detail in the following paragraphs.

SURFACE TO BE CURED OR DAMPPROOFED	METHOD
Unstripped forms	1
Construction joints between footings and walls, and between floor slab and columns	2
Encasement concrete and thrust blocks	3
All concrete surfaces not specifically provided elsewhere in this paragraph	4

B. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removed. If steel forms are used, the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 14 days of placing the concrete, curing shall be continued in accordance with Method 4.

C. Method 2: The surface shall be covered With burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.

D. Method 3: The surface shall be covered with moist earth not less than 4 hours, nor more than 24 hours, after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 days after placement of concrete.

E. Method 4: The surface shall be sprayed with a liquid curing compound. It shall be applied in accordance with the manufacturers printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film which will seal thoroughly.

F. Care shall be exercised to avoid damage to the seal during the curing period. Should the seal be damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.

G. Wherever curing compound may have been applied by mistake to faces against which concrete subsequently is to be placed and to which it is to adhere, said compound shall be entirely removed by hydroblasting just prior to the placing of new concrete.

H. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on uniformed surfaces, and within 2 hours after removal of forms from contact with formed surfaces. Repairs required to be made to formed surfaces shall be made within the said 2-hour period; provided, however, that any such repairs which cannot be made within the said 2-hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sand blasted to remove the curing compound, following which repairs shall be made as provided herein.

3.0.11. TESTING

A. Field Testing of Concrete

1. The Contractor shall coordinate with the Engineer's project representative the on-site scheduling of the materials testing consultant personnel as required for concrete testing.

2. Concrete for testing shall be supplied by the Contractor at no additional cost to the Owner, and the Contractor shall provide assistance to the materials testing consultant in obtaining samples. The Contractor shall dispose of and clean up all excess material.

B. Consistency

1. The consistency of the concrete will be checked by the materials testing consultant by standard slump cone tests. The Contractor shall make any necessary adjustments in the mix as the Engineer and/or the materials testing consultant may

direct and shall upon written order suspend all placing operations in the event the consistency does not meet the intent of the specifications. No payment shall be made for any delays, material, or labor costs due to such eventualities.

2. Slump tests shall be made in accordance with ASTM C143. Slump tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. Concrete with a specified nominal slump shall be placed having a slump within 1" (higher or lower) of the specified slump. Concrete with a specified maximum slump shall be placed having a slump less than the specified slump.

C. Unit Weight

1. Samples of freshly mixed concrete shall be tested for unit weight by the materials testing consultant in accordance with ASTM C138.

2. Unit weight tests will be performed as deemed necessary by the Engineer and each time compressive strength samples are taken.

D. Air Content

1. Samples of freshly mixed concrete will be tested for entrained air content by the materials testing consultant in accordance with ASTM C231.

2. Air content tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. In the event test results are outside the limits specified, additional testing shall occur. Admixture quantity adjustments shall be made immediately upon discovery of incorrect air entrainment.

E. Compressive Strength

1. Samples of freshly mixed concrete will be taken by the materials testing consultant and tested for compressive strength in accordance with ASTM C172, C31 and C39, except as modified herein.

2. In general, one sampling shall be taken for each placement, with a minimum of one (1) sampling for each day of concrete placement operations, or for each one fifty (50) cubic yards of concrete, or for each 5,000 square feet of surface area for slabs or walls, whichever is greater.

3. Each sampling shall consist of at least five (5) 6x12 cylinders or eight (8) 4x8 cylinders. Each cylinder shall be identified by a tag, which shall be hooked or wired to the side of the container. The materials testing consultant will fill out the required

information on the tag, and the Contractor shall satisfy himself that such information shown is correct.

4. The Contractor shall be required to furnish labor to the Owner for assisting in preparing test cylinders for testing. The Contractor shall provide approved curing boxes for storage of cylinders on site. The insulated curing box shall be of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished, and maintained by the Contractor. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by ASTM C31. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds and such that all specimens are shielded from direct sunlight and/or radiant heating sources. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours.

5. The Contractor shall be responsible for maintaining the temperatures of the curing box during the initial curing of test specimens with the temperature preserved between 60°F and 80°F as measured by a maximum-minimum thermometer. The Contractor shall maintain a written record of curing box temperatures for each day curing box contains test specimens. Temperature shall be recorded a minimum of three times a day with one recording at the start of the workday and one recording at the end of the workday.

6. When transported, the cylinders shall not be thrown, dropped, allowed to roll, or be damaged in any way.

7. Compression tests shall be performed in accordance with ASTM C39. For 6x12 cylinders, two test cylinders will be tested at seven days and two at 28 days. For 4x8 cylinders, three test cylinders will be tested at seven days, three at 28 days. The remaining cylinders will be held to verify test results, if needed.

F. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 214, ACI 318, and ACI 350.

2. The strength level of concrete will be considered satisfactory if all of the following conditions are satisfied.

   a. Every arithmetic average of any three consecutive strength tests equals or exceeds the minimum specified 28-day compressive strength for the mix (see Article 2.08). b. No individual compressive strength test results falls below the minimum specified strength by more than 500 psi.

3. In the event any of the conditions listed above are not met, the mix proportions shall be corrected for the next concrete placing operation.

4. In the event that condition 2B is not met, additional tests in accordance with Article 3.10, paragraph H shall be performed.

5. When a ratio between 7-day and 28-day strengths has been established by these tests, the 7-day strengths shall subsequently be taken as a preliminary indication of the 28-day strengths. Should the 7-day test strength from any sampling be more than 10% below the established minimum strength, the Contractor shall:

   a. Immediately provide additional periods of curing in the affected area from which the deficient test cylinders were taken.

   b. Maintain or add temporary structural support as required.

   c. Correct the mix for the next concrete placement operation, if required to remedy the situation.

6. All concrete which fails to meet the ACI requirements and these specifications is subject to removal and replacement at no additional cost to the Owner.

G. When non-compliant concrete is identified, test reports shall be sent immediately to the Engineer for review.

H. Additional Tests

1. When ordered by the Engineer, additional tests on in-place concrete shall be provided and paid for by the Contractor.

2. In the event the 28-day test cylinders fail to meet the minimum strength requirements as outlined in Article 3.10, paragraph F, the Contractor shall have concrete core specimens obtained and tested from the affected area immediately.

   a. Three cores shall be taken for each sample in which the strength requirements were not met.

   b. The drilled cores shall be obtained and tested in conformance with ASTM C42. The tests shall be conducted by a materials testing consultant approved by the Engineer.

   c. The location from which each core is taken shall be approved by the Engineer. Each core specimen shall be located, when possible, so its axis is perpendicular to the concrete surface and not near formed joints or obvious edges of a unit of deposit.

d. The core specimens shall be taken, if possible, so no reinforcing steel is within the confines of the core.

e. The diameter of core specimens should be at least 3 times the maximum nominal size of the coarse aggregate used in the concrete but must be at least 2-inches in diameter.

f. The length of specimen, when capped, shall be at least twice the diameter of the specimen.

g. The core specimens shall be taken to the laboratory and when transported, shall not be thrown, dropped, allowed to roll, or damaged in any way.

h. Two (2) copies of test results shall be mailed directly to the Engineer. The concrete in question will be considered acceptable if the average compressive strength of a minimum of three test core specimens taken from a given area equal or exceed 85% of the specified 28-day strength and if the lowest core strength is greater than 75% of the specified 28-day strength.

I. In the event that concrete placed by the Contractor is suspected of not having proper air content, the Contractor shall engage a materials testing consultant approved by the Engineer, to obtain and test samples for air content in accordance with ASTM Specification C457. D

END OF SECTION

03360 GROUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this Section consists of grouting the various items listed hereinafter and indicated on the drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

1.0.3. SUBMITTALS

A. Manufacturer's literature shall be submitted for review on the following items.

1. Nonshrink grout data shall include grout properties, mixing, surface preparation and installation instructions.

1.0.4. DELIVERY AND STORAGE

A. Grouting materials shall be delivered and stored in unbroken containers with seals and labels intact as packaged by the manufacturer.

1.0.5. QUALITY ASSURANCE

A. If the project includes patching, through bolt holes, epoxy anchors, and/or block outs, the manufacturer shall, if necessary, train the Contractor's employees in the mixing and curing of the epoxy grouts for each of these applications.

B. Furnish one year warranty. Manufacturer's warranty shall not contain a disclaimer limiting responsibility to the purchase price of products or materials.

PART 2 – PRODUCTS

3.0.1. MATERIALS

A. Cementitious grout shall be composed of one part of Type II Portland cement to three parts of sand.

B. Non-shrink Nonmetallic Grout shall be Five Star Special Grout 150, Five Star Products, Inc.; Grout F-100, Sauereisen Cement; Masterflow 713, BASF Building Systems; NS Grout, Euclid Chemical Company, pre-mixed type, or approved equal.

C. Non-shrink Metallic Grout: Master Builders Embeco 636 Plus Grout, BASF Building Systems, pre-mixed type, or approved equal.

D. Non-shrink Hydraulic Cement Grout shall be Waterplug, Thoro Products, BASF Building Systems, or approved equal.

E. Non-shrink shall be Five Star HP Epoxy Grout, Five Star Products, Inc., available from Coastal Construction Products, Inc. or Wall-Nu Trowelable, Steelcote Manufacturing Co., available from Florida Wire and Rigging Works, or approved equal.

F. Specifications for cement and sand for mortar and grout shall be the same as those for concrete.

3.0.2. EPOXY ANCHOR GROUT

A. Epoxy anchor grout shall conform to ASTM C 881 - Epoxy-Resin-Base Bonding Systems for Concrete, Type IV, Class A, B and C, Grade 3 with the exception of gel time.

B. Heat deflection temperature per ASTM D 648 -- Test Method for Deflection Temperature of Plastics Under Flexural Load shall be a minimum 120 degrees.

C. Manufacturer shall certify that the epoxy anchor grout will maintain 90 percent of its strength up to a temperature of 125 degrees F.

D. Grout shall come in a 2 chambered cartridge with a metering system that provides the proper ratio of hardener and resin. The grout shall also come with a static mixer nozzle to thoroughly mix the hardener and resin together.

E. Epoxy anchor grout shall be capable of being used in submersed applications once cured.

F. Compressive strength per ASTM D 695 - Test Method for Compressive Properties of Rigid Plastics shall be 10,000 psi minimum.

G. If the average working or operating temperature will be over 100 degrees F or in a high fire risk area, use cement based non-shrink grout and oversized holes.

H. Overhead anchors and anchors in fire-resistive construction shall be cast-in anchors.

I. Embedment of adhesive anchors/rebar shall be deep enough to develop the anchor/rebar. Embedment shall not exceed 67 percent of the member depth.

J. Epoxy anchor grout shall be SET-XP by Simpson Strong-Tie Co., Inc.; Powers PE1000+ by Powers Fasteners, Inc.; RE 500 SD by Hilti, Inc.; or approved equal.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. All bonding surfaces shall be clean and dust and oil free. Grout shall be mixed and applied in accordance with manufacturer's recommendations.

B. Grout Mix proportions (for grout to fill cores in reinforced masonry walls): 1. One part Portland cement, Type I or II. 2. 2-1/4 parts damp, loose sand. 3. Parts shot gravel (3/8" maximum). 4. Mix to conform to ASTM C476-83 with a minimum compressive strength of 2500 psi at 28 days, have an 8" minimum and 10" maximum slump.

C. Grout shall not be placed until base concrete or masonry has attained its design strength, unless authorized otherwise by the Engineer. Surfaces that will be in contact with grout shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete, and other deleterious materials.

D. Mechanical, electrical, and finish WORK shall be completed prior to placement of topping or concrete/grout fill. To ensure bonding to the base slab, the base slab shall be given an exposed aggregate finish. Alternatively where accepted by the Engineer, the base slab shall be given a roughened textured surface by a close-spaced rake while the surface is green. After curing, high pressure washing shall expose the aggregates and produce not less than a 3/16-inch amplitude roughness. Jackhammers or chipping hammers shall not be used.

3.0.2. INSTALLATION

A. Non shrink Grout:

1. Non shrink, nonmetallic grout shall be used for grouting precast concrete wall panel connections, column base plates, anchor bolts, reinforcing bars, pipe sleeves, and machinery supports.

2. Grout shall be mixed as close to the work area as possible and transported quickly to its final position in a manner which will not permit segregation of materials.

3. Non shrink grout shall be cured with water saturated burlap for at least three days or with an application of Super Rez Seal cure and seal compound applied immediately after grout placement.

4. Machinery set on grout pads shall not be operated until the grout has cured for at least 24 hours.

5. Expansive, non-shrink epoxy grout in the category of the DP Five Star Epoxy Grout shall be used for installation of vibrating machinery such as pumps.

B. Epoxy Adhesive Anchors: Grout shall be proportioned and mixed with automatic equipment. Unless otherwise indicated, embedment shall be sufficient to develop the

ultimate tensile strength of the anchor or reinforcing bar per the manufacturer's ICC-ES report but shall not be less than 8 diameters for threaded rod or 12 diameters for reinforcing or smooth bars. Holes shall be dry.

C. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, and cleaned. Drilled anchors shall not be installed until the concrete has reached the required 28 Day compressive strength. Anchors shall not be loaded until the grout has reached its indicated strength in accordance with the manufacturer's instructions.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work under this section includes the design, casting, delivery, erection and shoring of precast prestressed concrete structures as shown on the Contract Drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

B. Section 01340 “Shop Drawings”.

1.0.3. REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Without limiting the generality of other requirements of these specifications all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section:

1. South Florida Building Code, latest edition.

2. ACI 318, Building Code Requirements for Reinforced Concrete.

3. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

4. ASTM A416, Specification for Uncoated Seven-Wire Stress-Relieved Steel Strand for Prestressed Concrete.

1.0.4. QUALITY ASSURANCE

A. Fabricator shall be a recognized prestressed concrete manufacturer with minimum five (5) years’ experience in the manufacture and erection of similar units and whose design, fabrication and erection operations are supervised by a Florida Registered Professional Engineer.

1.0.5. CONTRACTOR SUBMITTALS

A. Shop Drawings: The Contractor shall submit shop and erection drawings for approval, showing concrete design strength; unit dimensions; unit weights; size, number, location and stress in prestressing strands; size, number and location of reinforcing bars including reinforcing for erection and handling stresses; concrete cover over

reinforcing and strands; bearing and anchorage details; concrete finish; curing method; erection marks; hoist points and shoring points.

B. Design Calculations: The Contractor shall submit for approval, neat, legible and complete design calculations prior to fabrication. Calculations shall be by a Florida Registered Professional Engineer whose seal shall appear on calculation sheets and shop drawings.

1. Calculations shall include predicted in-place cambers without superimposed loads, with superimposed dead loads and with superimposed dead loads and live loads.

2. Span length in calculations shall be from center of bearing to center of bearing.

3. Include bearing and anchorage details including those in the precast sections and those in the job cast concrete structure.

C. Certificates: The Contractor shall submit manufacturer's test certificates on prestressing strands and reinforcing.

D. Concrete Cylinder Tests: The Contractor shall submit copies of cylinder break reports by an approved commercial test laboratory, made from each casting for this project to verify that concrete has attained minimum ultimate prestressed transfer strength specified.

1.0.6. DEFINITIONS

A. In these specifications, where the terms "Precast Concrete" and "Precast Concrete Specialties" are used, they shall have equivalent meaning.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: Minimum 7 day ultimate compressive strength 4000 of psi. Higher strength will be permitted to suit manufacturer's design. In other respects, concrete shall comply with requirements of Section 03300 “Cast-in-Place Concrete, Reinforcing and Formwork”.

B. Prestressing Strands: High strength 7 wire strand conforming with ASTM A416-94. Elongation test conforming with ASTM A270-90 with minimum elongation at rupture of 3.5% in 24 inches. Tests need not be made if certification of conformance with specifications is provided by manufacturer. Use strand of U.S. manufacture.

C. Reinforcing Steel: ASTM A615, grade 60.

D. Forms: Provide smooth units true to size, shape and detail with flat panes, sharp lines and arises, free from warp, twist, bow or similar distortions, spalling, broken edges,

cracks or similar defects. Dimensional tolerances to be as provided in ACI 525 Standards Minimum Requirements for Thin Section Precast Concrete Construction.

2.0.2. FABRICATION

A. General: Fabricate units accordance with approved shop drawings and approved design calculations

B. Unit design and fabrication: Conform with ACI Standard Building Code Requirements for Reinforced Concrete and the Prestressed Concrete Institute Standards. Fabricator shall design joists and beams in accordance with loads indicated on drawings. Camber under dead load or deflection under total load shall not exceed 1/360 of span.

C. Inserts: Install hanger inserts and sleeves in unit forms for mechanical and electrical items as provided under other sections and as shown on drawings.

D. Curing: Top surface to receive water curing only.

E. Marking: Distinctively mark each unit with manufacturer's name and mark indicated on erection drawings.

F. Age: Units shall be minimum 10 days old before shipping or erection.

2.0.3. PREFORMED JOINT SEALANT

A. The joint sealing compound shall be Quik-Seal, a preformed, cold applied, ready to use plastic joint sealing compound as supplied by Quikset Utility Vaults, Santa Ana, California; Ram-Nick by K.T. Snyder Company; or approved equal.

2.0.4. MORTAR

A. Mortar used between the sections of precast concrete vaults shall be as recommended by the manufacturer.

2.0.5. NON-SHRINK GROUT

A. Non-shrink grout shall be as specified in the Section 03360 "Grout".

2.0.6. QUALITY CONTROL

A. Precast concrete units shall be made by an experienced manufacturer and shall be constructed as shown on the drawings and specified herein and shall be free of defects, checks and cracks. Care shall be taken in the mixing of materials, casting, curing and shipping to avoid any of the above.

B. The Contractor shall notify the City a minimum of 5 days before the units are cast and 5 days before shipment is made, in order to provide for plant inspection, if the City so directs.

PART 3 – EXECUTION

3.0.1. ERECTION

A. Erection to be by manufacturer and supervised by manufacturer's Florida Registered Professional Engineer or authorized representative. Handle and install units with precision, in conformance with drawings, details and erection drawings.

3.0.2. INSTALLATION

A. Required pads, plates and reinforcing bars shall be furnished for casting and anchorage in the adjoining work. The precast concrete units shall be installed in a workmanlike manner with the units tight and at right angles to the supporting beams or walls. The units shall be aligned and leveled in accordance with the procedures recommended by the manufacturer. Units shall be grouted by a mixture of not less than one part cement to three parts fine sand, care being taken to see that joints are filled. Damp grout that may have seeped through shall be removed before it hardens.

B. All openings in the precast units shall be made by the Contractor and are the responsibility of the Contractor. Where details for an opening are not shown on the drawings, the opening shall be made in accordance with the recommendation of the manufacturer. When an opening causes a loss in carrying capacity of the unit, the adjacent units shall be designed to carry the additional dead and superimposed load transferred from the unit with the opening. The Contractor shall provide saddle headers as required.

C. Extreme care shall be used to avoid damaging or soiling concrete as no repairing or cutting will be permitted. Damaged units shall be replaced at the expense of the Contractor. Wooden hammers shall be used, with pinch bars being used on unexposed parts only.

3.0.3. CLEANING AND REPAIRS

A. Cleaning: Clean exposed surfaces of units of stains to a uniform appearance. Do not use caustic or acid cleaners.

B. Repairs: Repair nicks or chips in exposed areas.

END OF SECTION

DIVISION 5 – METALS

05520 ALUMINUM RAILING

PART 1 - GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall design, furnish, fabricate, and install aluminum railing and appurtenances as indicated on the Drawings, complete, all in accordance with the requirements of this section.

1.0.2. QUALITY ASSURANCE

Standards: Unless otherwise specified, all materials, workmanship and practices shall conform to the following Standards:

A. South Florida Building Code, latest edition.

B. Aluminum Construction Manual, latest edition, by the Aluminum Association.

C. Applicable OSHA requirements

D. Rail and fittings shall be clear anodized, as specified below. Railing shall be plastic wrapped for protection. Wrap shall be removed only after erection.

1.0.3. SUBMITTALS

A. The Contractor shall submit to the Engineer of Record detailed shop drawings, prior to fabrication, for review and approval. The drawings shall be complete, covering all aluminum railing members, fastenings, connections, means of galvanic protection, etc., which for part of a finished structure.

B. Where written certification are called for below, it shall be submitted to the Engineer of Record.

PART 2 – PRODUCTS

2.0.1. ACCEPTABLE MANUFACTURING

A. Wesrail: Moultrie Manufacturing Co.

B. Thompson Railing Systems: Thompson Fabricating Co.

C. Approved equals.

2.0.2. ALUMINUM RAILING SYSTEM

A. General: Where indicated on the Drawings, pipe handrailing shall be provided. Pipe handrailing shall be supplied as required by the South Florida Building Code and OSHA whether indicated on the Drawings or not, including stair railings.

B. Prior to fabrication, verify all dimensions by actual measurement, so that the finished ladder will fit accurately and provide a neat appearance, with no part out of line and grade by more than 1/8 inch.

C. Handrailing system, including rails, stanchions and attachments, shall be designed and constructed to resist a load of not less than 200 pounds applied in any direction and at any point on the rails.

D. The handrailing shall be of welded construction design, with field splices where required between sections. All exposed welds shall be continuous fillets, watertight, and ground smooth. Bends, warps and ramps in the rails shall be made by bending the pipe to true and even curves, without kinks.

E. Vertical pipe supports to be set in concrete shall be set in built-in pipe sleeves, or concrete may be cored, minimum 5-inches in length. Removable posts shall be sleeved. The joint between upright and sleeve shall be cemented with epoxy grout.

F. Wall brackets for handrail shall be as manufactured by Mouitrie Manufacturing Company, J.G. Braun Company, Fulton Metal Products Company, or equal. Wall brackets shall be fabricated of metal compatible with handrail metal. End all wall mounted railings at the line of the first nosing.

G. Provide chain gates across all openings in railings. Chain shall be welded, stainless steel, close link hoisting chain, 1/4-inch by 1-5/16 inch links. One end of each chain gate shall be attached by a stainless steel shackle to a 1/4-inch round stainless steel stock eye bolted to the pipe stanchion and the other end connected to a heavy stainless steel snap hook. A 1/4-inch stainless steel eye shall be provided in the opposite stanchion or concrete wall, installed at the height of the center lines of the top rail.

H. Aluminum Railing: Stanchions and rails shall be nominal 2 inch diameter minimum, Schedule 80 aluminum alloy 6061-T6 with clear anodized finish. Railing posts must be adequately reinforced to meet the specified design loads. Handrailing shall be 42 inches in height. In no case shall the spacing of handrail posts exceed five (5) feet on center. Stainless steel railings may be used in lieu of aluminum railing at the CONTRACTOR's option.

I. Kickplates: Kickplates where not specifically called for in the Drawings shall be furnished and installed typically at the edges of all metal walkways and at other handrail installations. Kickplates shall be l/4-inch thick, must meet OSHA requirements, shall project 4-inches above walkway surface, may not infringe on minimum required walkway width and material must be the same as that of handrail construction. Kickplates shall be connected to handrail posts as detailed on the drawings.

2.0.3. FINISHES

A. Finish shall be natural anodized after forming, and before assembly. Each piece of aluminum to be anodized shall be finished (anodized) in accordance with the following Aluminum Association Designations:

1. Sheet: AA-M10C11c21A31, with minimum 0.4 mil coating

2. Structural shapes, plates, bars and pipe: AA-M10C11C21A41, with minimum 0.8 mil coating.

B. All fabricated aluminum items of the railing shall be anodized after fabrication. No touch-up paint will be accepted.

C. A written certification stating compliance with the aluminum finish (anodizing) as specified above shall be furnished for all aluminum material and/or items furnished and installed by the Contractor.

D. Protect all aluminum by a factory applied coating of water-tight clear methacrylate lacquer having a minimum thickness of 0.008"minimum capable of withstanding the action of lime and mortar for a period of at least one week in an atmosphere of 100% relative humidity at 100ºF.; the action of 10% by weight muriatic acid for a period of six hours at 70ºF.; and the action of the atmospheric weather for a period of 12 months. The coating shall be sprayed on, after anodizing and sealing procedures have been followed. Submit written certification indicating that the coating meets or exceeds the requirements of the Aluminum Association Mortar Test for Clear Lacquers on Anodized Aluminum.

2.0.4. EXPANSION BOLTS

A. Stainless steel type 316 wedge bolts furnished by handrail manufacturer.

PART 3 -- EXECUTION

3.0.1. EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.0.2. PREPARATION

A. Clean and strip primed items to bare metals where site welding is required.

B. Supply items required to be cast into concrete with setting templates, to appropriate sections.

3.0.3. FABRICATION

A. Fabricate railings in shop, made and erected square, plumb, straight and true, designed for adjustment to field variations, accurately fitted with tight joints and intersections.

3.0.4. INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors and plates required for connecting railings to structure.

C. Aluminum Railings: Aluminum railing fabrication shall be performed by craftsmen experienced in the fabrication of architectural metal work. Exposed surfaces shall be free from defects or other surface blemishes. Dimensions and conditions shall be verified in the field. All joints, junctions, miters and butting sections shall be precision fitted with no gaps occurring between sections, and with all surfaces flush and aligned. Electrolysis protection of materials shall be provided.

D. After satisfactory installation, all coating shall be removed leaving the clean undamaged surface. In locations where aluminum may come in contact with dissimilar metals or masonry, the surfaces shall be given a heavy brush coat of alkali-resistant bituminous paint or separated with a non-absorptive tape or gasket.

3.0.5. EXPANSION BOLTS

A. Expansion bolts shall be spaced 10d apart and 5d edge distance for no reduction in pull out strength. A safety factor of four shall be provided on expansion bolt pull out values published by the manufacturer.

3.0.6. ALUMINUM SURFACES

A. Aluminum surfaces in contact with concrete, grout (except epoxy grout), dissimilar metals (except stainless steel), or buried in the ground shall be protected with a heavy coat of Bitumastic No. 300, as manufactured by Kop-Coat, Inc., or approved equal.

END OF SECTION

05550 CASTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section specifies castings for use in this project, including water and force main valve boxes and covers. It also establishes casting requirements, including tolerances, on all castings to be furnished and installed under this project.

1.0.2. REFERENCES

A. Materials used in the manufacture of the castings shall conform to ASTM A48 "Gray Iron Castings," for Class 30B iron. Castings shall be non-rocking. Manhole and valve box covers shall have a roadway type surface and machined mating surface.

B. Proof Loading: AASHTO M306 Loading.

1.0.3. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing of products specified in this section with minimum five years documented experience. Non-domestic castings shall conform with all marking and other requirements contained in federal and state statutes.

PART 2 – PRODUCTS

2.0.1. GENERAL

A. Shop drawings shall be furnished for all castings supplied and said drawings shall include certified dimensions and weights of all components. Dimensions shall conform with City Standard Detail requirements.

B. Finish casting dimensions shall be held to the following tolerances: Up to 4 inches, ±1/32 inch; 4 to 8 inches, ±3/64 inch; 8 to 12 inches, ±1/16 inch; 12 to 24 inches ±1/8 inch; above 24 inches, add the appropriate (minimum) value from those given above to ±1/8 inch. Note that this shall not affect the requirement that mating surfaces shall be machined and shall bear for their full length. Components shall be interchangeable with new and existing units without exceeding the tolerance add up specified above.

C. Weight of castings supplied shall not vary more than ±5 percent from the certified weight supplied by the Contractor as a part of his shop drawings.

D. The foundry's name (and if not domestically produced, foundry's name and country) shall be cast in the bottom of each lid. Body and lid or frame and cover shall be manufactured by the same foundry. Manufacture of the various components comprising one set, such as for example; a valve box and lid, by different manufacturers is expressly forbidden.

E. Note that name cast into the bottom of the lid shall be the name of the actual foundry doing the casting. Name of an importing, purchasing or fabricating (from components) firm will not be acceptable. Methods of attaching this information other than casting are not acceptable.

F. With the shop drawings of each component, submit the name, address and county of the foundry producing the component. Further, this foundry shall not be changed during the course of the Contract without written previous notification of and written permission from the City Engineer, Engineering Division, Opa-Locka Public Works Department.

G. Each shipment of castings provided by the Contractor shall be accompanied by a certification specifically stating that the materials of that shipment comply with all requirements of this Specification, specifically including dimensions and tolerances, materials of manufacture, weights of components, marking and foundry of origin. This certification shall be signed, dated and sealed by a registered professional engineer licensed to practice in the state where the materials are cast or if not of domestic manufacture in the state where the supplying firm is located.

H. Contractor's should be aware that it is the intent of the City to periodically check materials supplied for conformance to these specifications to include materials testing, dimensions and tolerances, component weights, marking, finish and fit, and such other matters as are necessary to assure supply of products meeting our requirements. Random testing of materials supplied will be at City expense if passed. Any retesting due to material not passing tests will be at the supplier's expense.

2.0.2. CASTINGS AND MATERIAL – GENERAL

A. General materials used in the manufacture of the castings shall conform to ASTM Standard A48, "Gray Iron Castings", latest edition, for Class 30B iron. Valve box covers shall have a roadway type surface, machined mating surface and shall be non-rocking.

B. Castings shall be furnished unpainted with shotblasted finish.

C. Castings shall be as manufactured by U.S. Foundry 7630 ring and FD cover, or approved equal.

D. Valve boxes and valve box covers:

1. For Water Facilities:

a. Cast iron boxes shall be extension type with slide-type adjustment and flared base. The minimum thickness of metal shall be 3/16 inch. The word “W" shall be in the cover. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location. Boxes to be No. 3 for 6” and larger lines.

2. For Sewer Facilities:

a. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

b. The letter “S” shall be cast in the cover for sewer force mains.

c. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

d. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

e. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

f. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

g. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL INSTALLATION

A. Castings with cracks or other defects, shall not be installed in the work.

B. The use of sloped asphaltic concrete ramp rings will not be permitted.

C. The Contractor shall provide all barricades, signs and flashing warning lights necessary to warn pedestrians and motorists of the construction along the entire route of the project.

D. Frames and covers or valve boxes and covers shall be set accurately to grade to conform to the finished grade of the adjacent areas.

E. Castings level without tipping, to correct elevations.

F. It shall be the Contractor's responsibility to assure that castings are set to match existing and/or proposed finish paving grades.

END OF SECTION

DIVISION 10 – SPECIALTY CONSTRUCTION

10001 STORMSAFE VAULT TREATMENT STRUCTURE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

J. The Contractor shall furnish and install StormSafe Model SSV40-2-000 structure, inner components and filter cartridges as shown on the Drawings, and as specified herein.

K. This section includes minimum construction requirements for the StormSafe Vault installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

L. Manufacturer: FABCO Industries Inc.

1.0.2. RELATED SECTIONS

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. Cover/slab: 26,100 lb (13 tons)

B. Base w/ filters: 83,500 lb (42 tons)

2.0.2. MATERIALS MEET OR EXCEEDS REQUIREMENTS

A. Vault:
- Reinforcement steel: rebar, ASTM A-615 grade 602.
- Cement: ASTM C-150 specifications,
- Concrete 28 day compressive strength shall be 5000 psi (min)

B. Access manholes: ASTM A-48, class 35B gray iron or ASTM A536, grade 80-55-06 ductile iron.

2.0.3. PERFORMANCE CHARACTERISTICS (W/ FABCO HYDROCARBON CARTRIDGE)

A. Maximum cartridge capacity = 40
B. Maximum treatment capacity = 10.0 cfs (4,500 gpm)
C. Bypass capacity 24.0 cfs (10,800 gpm)

PART 3 – EXECUTION

3.0.7. INTALLATION OFF-LOADING, SETTING, EXCAVATION, DEWATERING, DRAINAGE, AND BACK FILL OPERATIONS

Shall be performed in accordance manufacturer requirements local regulations and are the responsibility of the contractor. Sub-base and backfill depth are site specific and shall be specified in the technical specifications or by the engineer of record.

.

3.0.8. GENERAL INSTALLATION

A. The contractor shall verify That the unit is vertically and horizontally plumb and stable, with minimum voids and minimum un-compacted soil after back fill operation.

B. Connect and seal drain lines to the StormSafe inlet and outlet ports and, if necessary, grout with approved non-shrinking grout-fill in accordance with grout manufacturers' instructions. All grout-fill materials shall be supplied by the contractor. The StormSafe "inlet" and "outlet" ports are clearly labeled with black paint. Inlet and outlet drain lines are to be aligned flush with respect to the interior vault walls.

3.0.9. MAINTENANCE

A. Maintenance and cartridge filter replacement instructions are provided separately by FABCO and are typically site specific.

B. Cartridge filter replacement (in general) for best performance, replace cartridge filters IAW FABCO recommendations. High contaminant locations may require more frequent cartridge replacement. Remove any debris or heavy sediment from the influent and effluent chambers. Enter the StormSafe cartridge chamber in accordance with state and local regulations for enclosed space entry. Remove each cartridge by rotating 30 degrees in the clockwise direction and lifting. Likewise, install the new cartridge and lock in place by rotating 30 degrees in the counterclockwise direction. Disposal of used filter cartridges per local regulations.

END OF SECTION

10001 STORMSACK PLUS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install StormSack Plus Model PSS1626-1E-000 structure, inner components and filters cartridges as shown on the Drawings, and as specified herein.

B. This section includes minimum construction requirements for the StormSack Plus installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

C. Manufacturer: FABCO Industries Inc.

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. TOTAL WEIGHT, EMPTY: 20 LBS (EST)

2.0.2. MATERIALS

A. Vault:
- Frame: Aluminum alloy, 5000 SERIES
- StormSack: Geotextile
- Hardware: Stainless Steel

2.0.3. PERFORMANCE CHARACTERISTICS

A. Capacity: 0.9 CU. FT

B. Filtered Flowrate: 635 GPM (1.4 CFS)

C. Protected bypass flowrate 940 GPM (2.1 CFS)

2.0.4. CLEAR OPENING RANGE:

A. Minimum size 15" X 25"

B. Maximum size: 17" X 27"

PART 3 – EXECUTION

3.0.1. GENERAL INSTALLATION

A. The Carefully remove the storm grate, measure catch basin frame clear opening, and adjust flanges to rest on grate support ledge. Install StormSack and verify each flange is secure and the unit is snug with little movement in the drain. Install corner fillers using provided double-sided tape. Tuck rubber splash guard within drop flanges to direct flow into the unit. Trim if necessary. Reinstall the storm grate directly on the StormSack adjustable support flanges.

B. Recommended minimum vault depth 2" below StormSack

C. Replacement StormSack P/N: PSS1626-1E-200

D. Replacement oil boom P/N: PSS1626-1E-720

END OF SECTION

DIVISION 15 – MECHANICAL

15000 BASIC MECHANICAL REQUIREMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The drawings and specifications shall be considered as complementary, one to the other, so that materials and work indicated, called for, or implied by the one and not by the other shall be supplied and installed as though specifically called for by both. The drawings are to be considered diagrammatic, not necessarily showing in detail or to scale all of the equipment or minor items. In the event of discrepancies between the drawings and the specifications, or between either of these and any regulations or ordinances governing mechanical work, the Contractor shall notify the Engineer of Record in ample time to permit revisions.

1.0.2. SITE INVESTIGATION

A. It shall be the responsibility of the Contractor to visit the site of the work and become familiar with all available information regarding the location of existing facilities. Failure of the Contractor to fully inform himself of all existing conditions will not be cause for additional compensation.

1.0.3. NEW EQUIPMENT AND MATERIALS

A. All equipment and materials used in this installation shall be new, of the best quality and, unless otherwise noted, shall be standard catalog items of the various manufacturers.

1.0.4. STANDARDS

A. The codes and standards covering mechanical work include, but are not limited to:

1. American National Standards Institute (ANSI)
2. American Society for Testing Materials (ASTM)
3. American Society of Mechanical Engineers (ASME)
4. American Welding Society (AWS)
5. National Fire Protection Association (NFPA)
6. National Electrical Manufacturers Association (NEMA)

7. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

8. National Sanitation Foundation (NSF)

9. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

10. South Florida Building Code (SFBC)

11. Codes, Regulations, Ordinances, etc., of the State, County, and/or Municipality, in which the construction is located, and any political division having jurisdiction over this work.

1.0.5. CUTTING AND PATCHING

A. All cutting and patching necessary for the work shall be performed by the Contractor. Where interferences occur, and departures from indicated arrangements are required, the Contractor shall coordinate the mechanical work with the other trades involved and make a determination as to changed locations and elevations of the piping and shall obtain approval from the Engineer of Record and the City for the proposed changes.

1.0.6. SAFETY REQUIEREMENTS

A. In addition to the components specified and shown on the drawings and necessary for the specified performance, the Contractor shall incorporate in the design and show on the shop drawings all the safety features required by the current codes and regulations, including but not limited to those of the Occupational Safety and Health Act of 1970, and Amendments thereto.

1.0.7. METAL FASTENER

A. Unless otherwise indicated, metal fasteners and related parts shall be of aluminum or American made stainless steel and shall be of adequate strength for the purpose intended.

1.0.8. PREVENTION OF ELECTROLYSIS

A. Where the contact of dissimilar metals may cause electrolysis and where aluminum will contact concrete, mortar or plaster, the contact surface of the metals shall be separated using not less than one coat of zinc chromate primer and one heavy coat of aluminum pigmented asphalt paint on each surface; or where deemed necessary by the Engineer of Record, not less than one course of asphalt saturated cotton fabric cemented to both metals with flashing cement, shall be used. Finished works shall be cleaned and excess cement removed.

1.0.9. FACTORY TEST

A. When equipment is required to be factory tested, the results of the tests shall be submitted to the Engineer of Record and the City and approval of the test results shall be obtained before shipment of the equipment.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15001 WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These specifications shall govern the design, materials and installation requirements of the City of Opa-Locka for construction of potable water mains pipes and fittings including water services, valves and other appurtenances.

B. The use of 10-inch, 14- inch or 18-inch pipe, fittings or valves, is not permitted except as may be approved for connections to existing mains.

C. This section does not purport to cover all materials or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

D. The City intent is to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City's designated representative in the field shall be followed by the Contractor.

1.0.3. PROJECT APPROVAL

A. Potable water mains shall follow the City's Public Works Engineering Manual. Mains shall be constructed in accordance to the City's Standard Details, cleaned, tested, and disinfected under the supervision of the City designated Construction Manager, in accordance with Section 1990 "Cleaning and Testing of Mains" and Section 1995 "Disinfection of Water Mains".

B. In addition, systems shall be designed in accordance with the requirements of the Miami-Dade County Department of Regulatory and Economic Resources (RER) Division of Environmental Resource Management (DERM), City's Fire Department, Florida Department of Health, and the City's Public Works Engineering Manual.

1. Installed pipe shall be designed to be mechanically restrained to the design pressure. Lengths of restrained pipe shall be identified on the plans.

1.0.4. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required.

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.5. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 “Special Project Requirements”.

1.0.6. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 “Shop Drawings”.

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.7. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.1. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

   1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe for this project shall be restrained joint pipe Class 51, as manufactured by U.S. Pipe or American Pipe (or approved equal) in accordance with ANSI standard A21.51 working pressure not less than 250 pounds per square inch. The inside lining of the pipe shall be cement mortar as per ANSI Standard A21.4 and AWWA C 104. The outside coating shall be an asphaltic coating approximately one mil thick as specified in AWWA C151. All pipe and fittings shall be poly-wrapped conforming to the requirements of ANSI Standard A21.5 and shall have an 8-mil minimum thickness. For all 6-inch diameter DIP, use class 52.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.2. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

2.0.3. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.4. CONCRETE, MORTAR AND GROUT

A. See Section 03300 “Cast-in Place Concrete, Reinforcing and Formwork”.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15110 “Butterfly Valves”.

C. See Section 15115 “Check Valves”.

D. See Section 15120 “Gate Valves”.

E. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with the City of Opa-Locka Public Works Manual or FDOT.

C. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any water or fire mains, the City shall perform an onsite inspection in order to verify the following:

a. Size of pipe

b. Materials onsite

B. If this inspection does not occur or parts are missing, the shutdown will be canceled.

C. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

D. Timing of all shutdowns will depend on affected stakeholders and shall be coordinated through the City of Opa-Locka Public Works Department.

E. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events

C. Set-up and Verification: The Contractor’s Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

D. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

E. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

F. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. The Contractor shall follow the sequence of construction as indicated in Section 01120 "Sequence of Construction".

G. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

H. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The

Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

I. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

J. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

K. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3" wide blue detector tape for water main. The words "CAUTION WATER LINE BURIED BELOW" on the upper side of the pipe shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all water mains and services or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County standard details.

E. Ductile Iron Pipes shall be laid with minimum vertical cover of 36 inches below finished grade, on City and FDOT roads. The minimum vertical cover over Ductile Iron pipes on Miami-Dade County roads shall be 48 inches. For vertical cover less than 30 inches below finish grade use concrete slab as per City's Standard Detail. For vertical cover between 30 inches and 36 inches below finish grade use ductile iron pipe class 53.

F. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

G. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

H. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

I. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

J. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

K. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

L. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

M. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

N. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

O. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

P. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

Q. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

R. Flanged joints shall be used only where indicated on the plans. Before making up flanged joints in the pipeline, the back of each flange under the bolt heads and the face of each flange shall have all lumps, blisters and excess bituminous coating removed and shall be wire brushed and wiped clean and dry. Flange faces shall be kept clean and dry when making up the joint, and the workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Bolts and nuts shall be tightened by opposites in order to keep flange faces square with each other, and to ensure that bolt stresses are evenly distributed.

S. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the City, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

T. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

U. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all

bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

V. Water main connection shall not be made to the City's main unless water in the trench at the connection point is at least 6" below the bottom of the pipe. When work is not in progress, open end of pipes, fittings, and valves shall be securely closed with polywrap or Filter Fabric so that no trench water, earth, or other substance will enter the pipes or fittings. Where any part of the coating or lining is damaged, the Contractor shall repair the damaged coating or lining in a satisfactory manner at his expense. Pipe ends left for future connections shall be valved, plugged or capped, and properly restrained.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department. Tapping sleeve glands shall be tested and pass a pressure test of 150 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

Y. Only the Public Works Department is authorized to shut-off water service within the City.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground DI pipe fittings 30 inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

JOINT	RESTRAINT (or approved equal)
Push-On DIP	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DIP Pipe	EBAA Iron Series 1100 Megalug

D. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

E. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, in accordance with the standard details.

3.0.5. CLEANING, TESTING AND DISINFECTION

A. See Sections 02505 "Cleaning and Testing of Mains" and 15995 "Disinfection of Water Mains".

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of 24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. Water lines shall not be laid in the same trench with sewer lines, storm sewer, gas lines, fuel lines, or electric cables. The horizontal and vertical separation shall be in accordance with the Department of Health (HRS) latest revision.

B. The existing water main network shall be analyzed during the design to determine which mains can be abandoned and taken out of service during the construction of water mains. Mains to be abandoned shall be left in place and are to be cut, filled with grout and capped to the nearest valve.

C. The cost of tests including water usage and retesting due to failures shall be at the Contractor's expense.

D. For As-Built Drawings information, refer to Section 01725 "As-Builts Drawings".

END OF SECTION

15002 FORCE MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These Specifications shall govern the materials and installation requirements of the City of Opa-Locka for force mains constructed in its service area. All pipe fittings and appurtenances intended for conveying or transmitting fluids under pressure shall conform to the requirements for force main materials contained in the City of Opa-Locka Public Works Manual.

B. This Specification does not purport to cover all material or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

C. It is intent of the City to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The Contractor shall provide all required Certifications.

1.0.3. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required in addition to, not in lieu of, County department inspections (if any).

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.4. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 "Special Project Requirements".

1.0.5. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 "Shop Drawings".

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.6. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.4. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe (D.I.P.) for this pipe shall have a pressure class rating of 150 P.S.I. The interior of ductile iron pipes and fittings shall be poly-lined in accordance with AWWA/ANSI Standard C104/A21.4 or Protecto 401 Ceramic Epoxy with a minimum dry film thickness (DFT) of 40 mils. Either alternative shall require shop drawings approval prior to construction. Cement mortar lining is NOT acceptable for force mains. The outside coating of the pipe shall be asphaltic, approximately one (1) mil thick, as specified in AWWA C151, latest revision. The polyethelene wrap for ductile iron pipe encasement, shall conform to the requirement of ANSI Standard A21.5 and shall be manufactured from virgin polyethelene material. The lining shall have an eight (8) mil minimum thickness. Wrapping tape shall be of the same material.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.3. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

C. Valve Boxes and Covers for Sewer Facilities

1. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

2. The letter “S” shall be cast in the cover for sewer force mains.

3. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

4. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

5. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

6. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

7. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

2.0.4. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15125 “Plug Valves”.

C. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with Section 1 of the City of Opa-Locka Public Works Manual or FDOT.

C. Flow Control: Flow control shall be exercised as required to ensure that no flowing sewage comes into contact with sections of the manhole or sewer pipe under construction.

D. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any sewer mains, the City shall perform an on-site inspection in order to verify the following:

   a. Size of pipe

   b. Materials on-site

4. If this inspection does not occur or parts are missing, the shutdown will be canceled.

5. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

6. All shutdowns shall occur at night. 7. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events.

D. Flow management during construction will be done by the City with flow diversion towards the 42-inch force main on the discharge side of Pump Station 28. Please refer to Section 01120 “Sequence of Construction”.

E. Set-up and Verification: The Contractor's Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

F. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

G. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

H. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. Refer to Section 01120 "Sequence of Construction" for additional information.

I. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

J. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

    1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

    2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

K. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

L. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

M. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3-inch-wide metal green detector tape for force mains. The words “CAUTION FORCE MAIN BURIED BELOW” on the upper side of the pipe shall be printed at 30-inch intervals along the tape. Tape shall be placed 18 inches below grade above all force mains or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County Standard Detail.

E. DI pipe shall be laid with minimum vertical cover of 48 inches.

F. Vertical cover 36 inches to 48 inches below finish grade may be approved on a case-by case basis by the City of Opa-Locka Public Works Department.

G. For vertical cover 30 inches to 36 inches below finish grade, use ductile iron pipe Class 53.

H. For vertical cover less than 30 inches below finish grade, use concrete slab as per Standard Detail 16-7; use of this Standard Detail requires written approval from the City of Opa-Locka Public Works Department.

I. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

J. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

K. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

L. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

M. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

N. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

O. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

P. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

Q. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

R. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

S. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

T. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

U. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

V. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department.

Tapping sleeve glands shall be tested and pass a pressure test of 100 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

D. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

E. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

F. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, as per the City's Standard Details.

3.0.5. CLEANING, TESTING

A. Force mains shall be cleaned and flushed prior to pressure testing, with sufficient pressure to displace all test water and to remove sand, mud, or other deposits. If necessary, other approved methods must be used to ensure the removal of all such deposits. Water used shall be metered and paid for by the Contractor.

B. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

C. The complete force main system shall be pressure tested. The pressure test shall be for two (2) hours at 100 psi minimum test pressure in accordance with AWWA C600. No more than five (5) psi drop over the duration of the test. Final approval will be based on leakage test results. The maximum allowable leakage shall be determined by following AWWA formula:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: D = Pipe diameter in inches
S = Length of lines in lineal feet
P = Average test pressure in psi
L = Allowable leakage for system in gallons per hour

The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his representative.

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of

24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. As Built Drawings information, refer to Section 01725 “As-Builts Drawings”.

B. Force Mains:

1. All force main shall require profile drawing to show high and low elevation of the piping. Top of pipe shall be shown at each 100 ft. intervals, and finish grade.

2. Conflict manholes involving other utilities mains are to be avoided.

3. Design criteria evaluation for Air Release Valves will be required for vertical elevation changes of more than two (2) pipe diameter.

END OF SECTION

15005 PVC C900 WATER MAIN

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes materials, installation, and testing of PVC C900 for water main, conforming to AWWA C900. Size range is 4 through 16 inches.

B. Not for use near gas stations or other sites which may have hydrocarbon contamination.

C. PVC DR 18 (4 to 16-inches color blue) will be allowed for water mains due to current supply chain disruptions. The WASD will accept water main projects with PVC DR 18 for one year to 9/30/2023. Plans approved after 9-30-2023 will require DIP to be used for potable water mains.

D. All PVC pipe used shall be of new or recent manufacturer. Pipe with surface discoloration will not be allowed.

E. Pipe Fittings shall be ductile iron.

1.0.2. RELATED WORK

A. Section 33 01 10.54 (02505) “Cleaning and Testing of Mains”

B. Section 33 01 10.58 (UC-175) “Disinfection of Water Mains”

C. Section 33 14 00 (15060) “Piping and fittings”

D. Section 33 14 13 (UC-000) “Water Mains”

1.0.3. SUBMITTALS

A. Submit shop drawings in accordance with the City specifications or submit the Pre-Approved Product List Manufacturer.

B. PVC Pipe not on the Pre-Approved Products list shall supply the following:

1. Provide affidavit of compliance with AWWA C900.

2. Submit fully dimensioned cross-section of the bell and barrel of the pipe. Show the bell maximum outside diameter in the pressurized area and its minimum wall thickness at the same location.

3. Submit copies of the following manufacturer-required tests conducted on project pipe: a. Quick-burst strength of pipe and couplings. b. Flattening resistance of pipe. c. Record of additional tests after test sample failure.

4. Submit manufacturer's literature of gray iron and ductile-iron fittings including dimensions, thickness, weight, coating, lining, and a statement of inspection and compliance with the acceptance tests of AWWA C110 or C153. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of AWWA C153 fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in AWWA C153 is met.

5. Submit outline drawings and materials description of service connection saddles, corporation stops, and pipe plugs.

6. Submit test results for the restrained joint system to be used certified by an independent test laboratory demonstrating compliance with these specifications for each size and pressure rating.

1.0.4. QUALITY CONTROL

A. No deflection at the pipe joints is allowed for PVC pressure mains.

B. Bending of the Pipe Barrel: Gasketed PVC pies can be laid to the line of a curved trench by bending the pipe barrel into a curved shape. The procedure is as follows:

1. Keep the spigot in straight alignment with the bell.

2. Place compacted backfill around the assembled joint. This backfill restrict movement while the curvature is being made.

3. Place compacted backfill at the inside of the curve at the mid-point of the pipe length to form a fulcrum.

4. Using only manual effort, move the leading bell of the pipe length to be curved.

5. Longitudinal barrel deflection along the pipe barrel shall be based on half of the allowable longitudinal deflection established by the PVC Pipe Association Handbook of PVC Pipe Design and Construction Table 8.4. The allowable pipe barrel deflection in inches shown below is per 20-foot pipe length.

Pipe Size (inch)	4	6	8	10	12
Allowable Bending Offset at the opposite end of the R18 PVC 20-foot pipe length, inches	12	8.5	6.5	5	4

C. PVC pipe shall not be over-homed.

D. Pipe Bedding Material shall be class 1 backfill material with a maximum rock size of 3/4-inches.

E. The City shall have the final determination on allowing the use of PVC C900 DR 18 for

potable water mains. The Contractor/Design Engineer shall obtain approval in writing prior to finalizing 100% construction plans.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Pipe 4-inches through 16 inches shall conform to AWWA C900 DR 18, rubber-ring gasket bell end or plain end with elastomeric gasket coupling, cast iron equivalent outside diameter, material cell classification 12454 per ASTM D1784, latest revision.

B. All potable water pipe and fittings installed under this Project shall be color coded as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall blue pipe, shall have a co-extruded blue external skin, or shall be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall.

C. Pipe shall have a gasket locking system at the bell end. This does not restrain the pipe but rather locks the pipe in place and prevents the gasket from rolling.

2.0.2. FITTINGS

A. Fittings shall be cement lined, Ductile Iron and conform to AWWA C153, latest revision or AWWA C110, latest revision.

2.0.3. FLANGES

A. Flanges on outlets of fittings shall be Class 250 per ASME B16.1.

B. PVC flanges shall be of the one-piece solid socket design and shall be made of the same material as the pipe. Manufacturer's pressure rating shall be at least 250 psi at a temperature of 73°F. Minimum burst pressure shall be 500 psi. Flanges shall match the dimensions of ASME B16.5, Class 250, steel flanges for outside diameter, bolt circle, and bolt holes. Do not use Van Stone flanges.

2.0.4. OUTLETS

A. All connections to PVC require a saddle.

2.0.5. RESTRAINED JOINTS

A. Provide external restrained joints as indicated in the drawings. Restrained joints shall be provided by restraining systems that incorporate a wedge restraint on the restraint ring to provide positive restraint.

B. Internal Joint Restraint: RieberLok and Field Lok type gasket restraints are allowed for PVC Pipe in pressure applications.

C. Restraint devices for bell-and-spigot joints shall consist of a split restraint ring installed

on the spigot, connected to a solid backup ring seated behind the bell.

D. Restraining Glands shall be EBAA Iron Series 2000 and 1600 or approved equal.

E. The ASTM A536 ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

F. T-bolts, studs, and connecting hardware shall be high-strength, low alloy material in accordance with AWWA C111.

G. Design restraining devices to have a 2:1 safety factor based on the design strength of the pipe..

PART 3 – EXECUTION

3.0.1. PRODUCT MARKING

A. The pipe shall be marked by the manufacturer at 5-foot intervals and each coupling to identify the nominal diameter, the outside diameter base, that is, cast-iron or steel pipe (IPS), the material code for pipe and couplings, the dimension ratio number, AWWA C900, and the seal of the testing agency that verified the suitability of the material for potable water service (NSF/ANSI 61).

3.0.2. PRODUCT MARKING

A. PVC shall be protected from UV degradation caused by extended exposure to direct sun. Pipe with surface discoloration shall not be installed and immediately removed from the project site. Tarps used to protect the pipe from sunlight shall be placed to allow for adequate ventilation to prevent heat build-up.

B. Ship, store, and place pipe at the installation site, supporting the pipe uniformly. Avoid scratching the pipe surface. Do not stack higher than 4 feet or with weight on bells. Cover to protect from sunlight.

C. Do not drag PVC pipe over the ground, drop it onto the ground, or drop objects on it.

D. Store loose pipes on racks with a maximum support spacing of 3 feet. Provide shades for pipe stored outdoors or installed outdoors until the pipe is filled with water. Store fittings indoors in their original cartons.

E. Store solvent cement indoors or, if outdoors, shade from direct sunlight exposure. Do not use solvent cements that have exceeded the shelf life marked on the storage container.

3.0.3. HANDLING PIPE

A. Hoist pipe with mechanical equipment using a cloth belt sling or a continuous fiber

rope that avoids scratching the pipe. Do not use a chain. Pipes up to 16 inches in diameter may be lowered by rolling on two ropes controlled by snubbing. Pipes up to 6 inches in diameter may be lifted by hand..

3.0.4. INSTALLING BURIED PIPING

A. Pipe Bedding material for PVC shall be well graded Class 1 backfill with a max rock size of ¾-inch compacted in 6-inch lifts. The minimum trench width shall be the pipe width plus 24-inches (12-inches on each side). Backfill material shall be No. 57 limerock with a maximum particle size of 2-inches.

B. Before installation, check pipe and fittings for cuts, scratches, gouges, buckling, kinking, or splitting on pipe ends. Remove any pipe section containing defects by cutting out the damaged section of pipe.

C. Do not install PVC pipe when the temperature is below 40°F or above 140°F. D. Do not install pipe that is gouged or scratched forming a clear depression.

D. Install in accordance with AWWA C605, and as follows.

1. When installing pipe in trenches, do not deviate more than 1 inch from line or 1/4 inch from grade. Measure for grade at the pipe invert.

2. Backfill materials in the pipe zone shall be imported sand per Section 31 23 33 (02315) “Trenching and Backfilling of Piping Systems”. Do not add successive layers unless the previous layer is compacted to 90% relative compaction per ASTM D1557.

3. Compact material placed within 12 inches of the outer surface of the pipe by hand tamping only.

4. Compact trench backfill to the specified relative compaction. Do not float pipe. Do not use high-impact hammer-type equipment except where the pipe manufacturer warrants in writing that such use will not damage the pipe.

5. Pipe installed below the water table where the homing mark is not visible shall utilize an over-insertion prevention device.

3.0.5. UNDERGROUND LOCATION

A. All PVC installed shall have the ability to be located aboveground. Tracer Wire, Magnetic Balls and Location Safety Tape (all three) are all required by the Department.

B. Install 3M compatible magnetic location ball markers every 100 feet approximately 1-foot above the PVC main on straight runs and at any bends, vertical or horizontal. See WASD Standard Detail R 5.0.

C. Install 10-gauge tracer wire taped to the buried PVC pipe. The tracer wire shall provide a continuous path which can locate the buried installation by inducing a current to the tracer wire.

D. Install electronically detectable safety tape approximately 1 to 2 feet above the top of the buried PVC pipeline as a visible marker for future excavation.

3.0.6. ASSEMBLY OF RUBBER-GASKET PIPE JOINT

A. All Lay the pipe section with the bell coupling facing the direction of laying.

B. Lubricate the spigot over the taper and up to the full insertion mark with the lubricant supplied by the pipe manufacturer. If the lubricated pipe end touches dirt, clean the pipe end and reapply lubricant.

C. Insert the spigot into the bell and force it slowly into position.

D. Check that the rubber ring has not left the groove during assembly by passing a feeler gauge around the completed joint.

3.0.7. CLEANING AND TESTING

A. All of the piping installed under this project shall be tested as follows and as directed by the Engineer.

1. With exceptions as noted below, all PVC piping installed under this Contract shall be cleaned and tested according to section 33 01 10.54 (UC-170) "Cleaning and Testing of Mains".

2. Unless otherwise specified elsewhere herein, all PVC water main shall be tested at 150 psi in accordance with ANSI/AWWA C605.

3.0.8. FIELD QUALITY CONTROL

A. All mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. Test PVC Pipe mains in accordance with ANSI/AWWA C605-once all backfill is in place and fully compacted, and after all thrust blocks, if applicable, have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the Department as a condition precedent to the approval and acceptance of the system.

3.0.9. DESINFECTION

A. Disinfect in accordance with section 33 01 10.58 (UC-175) “Disinfection of Water Mains and ANSI/AWWA C651 – Disinfecting Water Mains. During the period that the chlorine solution or slug is in the section of pipeline, open and close valves to obtain a

chlorine residual at hydrants and other pipeline appurtenances. Swab exposed faces of valves and blind flanges prior to bolting flanges in place with a 1% sodium hypochlorite solution. Disinfect isolation valves, pipe, and appurtenances per AWWA C651, Section 4.7.

B. Flush with potable water until discolored water, mud, and debris are eliminated. Swab interior of pipe and fittings with a 1% sodium hypochlorite solution. After disinfection, flush with potable water again until water is free of chlorine odor. After confirming the chlorine residual, flush the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is either within 0.5 mg/L of the replacement water or no higher than that generally prevailing in the distribution system.

C. Discharge of chlorinated water into watercourses or surface waters is regulated by the National Pollutant Discharge Elimination System (NPDES). Disposal of the chlorinated disinfection water and the flushing water is the Contractor's responsibility. Schedule the rate of flow and locations of discharges in advance to permit review and coordination with Owner and cognizant regulatory authorities. For measuring chlorine concentration, supply and use a medium range, drop count, DPD drop dilution method kit per AWWA C651, Appendix A.1. Maintain kits in good working order available for immediate test of residuals at point of sampling.

END OFSECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Without limiting the generality of the other requirements, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available.

1. Association of State Highway Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture–Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
AASHTO M-306	Standard Specification for Drainage, Sewer, Utility, and Related Casting

2. American Society for Testing Materials (ASTM)

ASTM A48	Standard Specification for Iron Castings
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
ASTM B92	Standard Specification for Unalloyed Magnesium Ingot and Stick For Remelting
ASTM B148	Standard Specification for Aluminum-Bronze Sand Castings
ASTM B209	Standard Specification for Deformed and Plant Carbon-Steel Bars for Concrete Reinforcement
ASTM C478	Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
ASTM D4	Standard Test Method for Bitumen Content
ASTM D1784	Standard Classification System and Basis for Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds

ASTM D2584	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D2657	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings ASTM D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

3. American National Standards Institute (ANSI)

ANSI B16.1	Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250

4. American Water Works Association (AWWA)

AWWA C105 Polyethylene Encasement for Ductile Iron Pipe

AWWA C110 Ductile Iron and Gray Iron Fittings

AWWA C111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings

AWWA C115 Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges

AWWA C150 Thickness Design of Ductile Iron Pipe

AWWA C151 Ductile Iron Pipe, Centrifugally Cast

AWWA C210 Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings

AWWA C508 Swing-Check Valves for Waterworks Service, 2-In. through 24-In. (50-mm through 600-mm)

AWWA C550 Protective Interior Coatings for Valves and Hydrants

AWWA C600 Installation of Ductile Iron Water Mains and their Appurtenances

5. City of Opa-Locka Code of Ordinances

6. Florida Administrative Code (FAC)

7. Florida Building Code

8. International Organization for Standards (ISO) ISO 8179 Ductile Iron Pipes, Fittings, Accessories and their Joints – External Zinc-Based Coating

9. Miami-Dade County Code of Ordinances

10. Miami-Dade Division of Environmental Resources Management, Department of Regulatory and Economic Resources (RER-DERM) Regulations

11. Occupational Safety and Health (OSHA) Regulations

12. Society for Protective Coatings (SSPC) SSPC-PA 2 Procedure for Determining Conformance to Dry Coating Thickness Requirements

13. Ten State Standards

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15060 PIPING AND FITTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section describes materials, testing, and installation of ductile-iron pipe and fittings for water. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, fittings and accessories within the limits of work, as shown on the drawings and specified herein.

B. Where references are made to other standards or codes, unless specific date references are indicated the latest edition of said standard or code shall govern.

1.0.2. WORK NOT INCLUDED UNDER THIS SECTION:

A. Piping installation for various types of piping systems is specified other sections herein that constitute the Design Standards and Construction Details. Installations specified in this section are supplementary to those sections and in the case of conflict the more stringent condition shall prevail.

1.0.3. PIPING LAYOUT AND DESIGN CRITERIA:

A. Field verify dimensions prior to preparation of layout and shop drawings. Obtain the following information from the drawings and specifications:

1. Elevation of the pipe centerline and of the completed ground.

2. Alignment of the pipeline.

3. Field test hydraulic gradient elevation (HGL).

4. Nominal internal diameter, ID.

5. Design internal pressure class or HGL.

6. Joint types.

B. Obtain shop drawing approval prior to fabrication of piping. All items not specifically mentioned in the specifications or noted on the approved plans, but which are reasonably necessary to for a complete, functional, and satisfactory installation shall be included.

1.0.4. SUBMITTALS

A. Submit shop drawings in accordance with the General Provisions.

B. Provide an affidavit of compliance with standards referenced in this specification, e.g., AWWA C151, AWWA C153, etc.

C. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of pipe and fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in relevant standard is met.

D. Submit piping layout profile drawings showing location and dimensions of pipe and fittings; submit after equipment and valve submittals have been reviewed and marked "Resubmittal not required." Include laying lengths of valves, meters, in-line pumps, and other equipment determining piping dimensions. Label or number each fitting or piece of pipe. Piping having identical design pressure class, laying lengths, and bell-and-spigot dimensions that is to be placed in long straight reaches of alignment may have the same identifying label or number.

E. Provide the following information:

   1. Lining thickness.

   2. Wall thickness.

   3. Material test data for this project.

   4. Show deflections at push-on and mechanical joints.

   5. Submit joint and fitting details and manufacturer’s data sheets.

F. Fully detailed drawings of all fittings proposed shall be supplied by the manufacturer with its bid. The tabulated nominal weight of each size and type of fitting shall also be supplied by the manufacturer for all items proposed. This weight shall be that of the bare casting prior to application of any lining or coating.

G. Submit calculations and test data proving that the proposed restrained joint arrangement for restrained joint pipe can transmit the required forces with a minimum safety factor of 1.5.

H. Submit copy of manufacturer's quality control check of pipe material and production. Include hydrostatic test records and acceptance test records. For each acceptance test, submit a stress-strain diagram showing yield strength, yield point, tensile strength, elongation, and reduction in area. Provide specimen test section dimensions and speed and method used to determine speed of testing, method used for rounding of test results, and reasons for replacement specimens, if any. Submit ring-bending test of pipe of the same diameter and pressure class as the pipe required for this project to prove ring-bending stress at 48 ksi results in a factor of safety of 2.0.

I. For Ductile Iron Pipe and fittings, submit certificate that cement for mortar lining complies with ASTM C150, designating type.

J. Submit test report on physical properties of rubber compound used in the gaskets.

K. Submit test reports and certifications for ceramic epoxy lining as specified herein. Submit applicators qualifications. Submit manufacturer's written recommendations for application and repair of coating.

L. Submit drawing or manufacturer's data sheet showing flange facing, including design of facing serrations.

M. Submit weld procedure specification, procedure qualification record, and welder's qualifications prior to any welding to ductile-iron pipe or fittings.

1.0.5. DELIVERY, STORAGE, AND HANDLING

A. During shipping, delivery and installation of pipe and accessories, handle in a manner that is incompliance with the manufacturer's recommendations, and employ procedures that ensure delivery of an undamaged operable product.

B. Exercise particular care not to damage coatings by limiting exposure or physical contact with other materials, objects, or the environment.

1.0.6. INSPECTION

A. The Owner's Representative will inspect materials, production, and testing of pipes, fittings, and special pieces at manufacturer's plant.

1.0.7. QUALITY ASSURANCE

A. All pipe, fittings and other materials supplied under this contract shall be subject to inspection while still on the delivery truck. It is the sole responsibility of the vendor and supplier to make prior contact with the Storekeeper or the Construction Management section and provide a minimum of 48-hours prior notice of delivery. When so notified, the City will make arrangements for inspection of the material upon arrival or within a reasonable time thereafter. Material shall not be unloaded without inspections taking place either prior to or, if necessary for examination, during the unloading procedure. The City will not be responsible for any delays or additional costs created by noncompliance with the requirement for prior notification or the requirement for thorough inspection.

B. Materials shall be delivered in complete compliance with the AWWA Standards as modified herein, without damage, and shall match or exceed the quality of any samples supplied. The City absolutely reserves the right to require samples of any material supplied and to perform whatever tests considered by the Engineer, whose decision shall be final, to be in the City's best interest on said samples. Where such tests are

of a destructive nature, the sample, if it passes the test will be paid for (at cost as shown by invoice) by the City. Samples failing will be immediately replaced with suitable material at the supplier's/Contractor's expense. Samples required prior to order as a condition for purchase or as a materials submittal for approval will be at the supplier's/Contractor's expense but, if approved and not used for destructive tests, may be used in the work with permission from the Engineer.

C. Materials found to be defective, not in strict compliance with the quality standards of samples supplied or these specifications shall be immediately returned to the vendor at his expense. If defects are discovered at a later time, the vendor shall be required to remove said items and shall bare all costs for so doing together with any replacement costs. Rejection of items may subject the vendor to liquidated and/or actual damages as specified elsewhere herein.

D. Foundries supplying materials shall maintain their metallurgical records for a minimum period of two (2) years after fabrication and firms not doing so may be found in default.

E. Foundries which provide cause for rejection include but are not limited to; incorrect metallurgy or metallurgy which cannot be verified to the complete satisfaction of the Engineer; foundry identification/location, size, pressure and material identification information lost, removed, non-existent, or not visible when assembled; not in complete compliance with all applicable ANSI/AWWA Standards as modified herein and/or these specifications; not in compliance with NSF/ANSI; not in compliance with approved shop drawings; out of roundness in excess of ANSI/AWWA requirements; dimensional differences in excess of ANSI/AWWA requirements; rough exterior coating; chipped, cracked, scratched or otherwise damaged interior or exterior coatings or linings; interior or exterior coatings which are too thin; coatings too thick to allow proper assembly; coatings too thick to allow proper grip by restraining gaskets or other restraining elements; pin holes or honey combing of pipe; weld spatter or excess metal in gasket grooves or the whole of the bell area; bell areas which are distorted or otherwise improperly cast; spigots which are out of round, not of proper dimension, or not beveled to an extent that will allow easy assembly of the pipe joint; gaskets which are defective or of the wrong material; lack of joint materials; improper or defective joint materials; bolting of the wrong material or size; electro galvanizing or other exterior plating when hot-dip galvanizing is required; incorrect, flawed or damaged interior coating or lining; lack or non-submittal of all required certifications; non-timely submission of certifications; incorrect/incomplete certifications or certifications lacking the signature, date and seal of a professional engineer when so required; flanges which are too thin, not a right angles to the pipe centerline, or otherwise distorted; together with all other flaws or defects which in the opinion of the Engineer, whose decision shall be final, adversely affect the assembly and/or function of the piping system as intended.

PART 2 – PRODUCTS

2.0.4. PIPE AND FITTINGS: DUCTILE IRON

A. GENERAL

1. As used herein, "ANSI" denotes the American National Standards Institute, "AWWA" denotes the American Water Works Association, and "ASTM" denotes the American Society for Testing and Materials.

2. All pipe and fittings to be furnished hereunder shall conform to the referenced ANSI and/or AWWA Standard as modified herein, as appearing in the following sections.

3. All markings required on pipe and fittings, shall be permanent and clearly legible and located such that they will not be hidden or destroyed when assembled into the intended system. Plainly mark each length of straight pipe and each fitting at the bell end to identify the design pressure class, the wall thickness, and the date of manufacture, and the proper location of the pipe item by reference to the layout schedule. Mark the spigot end of restrained joint pipe to show clearly the required depth of insertion into the bell.

B. DUCTILE IRON PIPE

1. For Water Mains and Sewage Mains:

   a. DI pipe shall be centrifugally cast in metal molds or sand lined molds in accordance with AWWA C151 of grade 60-42-10 ductile iron. The above standard covers ductile iron pipe with nominal pipe sizes from 3 inches up to and including 64 inches in diameter.

   b. The pipe thickness shall conform to standard pressure classes AWWA C151 for the following sizes. The pressure class specified is the minimum permitted.

NOMINAL PIPE DIAMETER (INCHES)	CLASS
4 thru 12	350
14 thru 24	250
30 thru 54	150

   c. Depending on design conditions, the City reserves the right to require special thickness classes of DI pipe per AWWA C151 for the following sizes. Flanged (FLG) pipe shall not be less than Class 53 as identified in Table 50.15 of AWWA C150-91.

PIPE MATERIAL	NOMINAL PIPE DIAMETER (INCHES)	CLASS	TYPE OF JOINT
DI	4 thru 12	52	MJ or PO
DI	14 thru 54	51	MJ or PO

DI	All	53	FLG

C. GASKETS

1. For Water Mains:

   a. Water Mains shall use SBR gaskets for typical applications and field conditions.

   b. All gaskets for water applications shall be in full compliance with NSF/ANSI 61. Manufacturers shall maintain their NSF certification for the duration of the Contract and any extensions thereof.

2. For Sewage Mains:

   a. Sewage Mains Shall use Neoprene or EDPM gaskets for typical applications and field conditions.

3. Areas with chemical or hydrocarbon contamination shall use the gasket material as recommended by RER-DERM. All joints shall be equipped with Viton gaskets

B. FITTINGS

Fittings and Joints (Water & Force Mains)

1. Fittings shall be manufactured in accordance with AWWA C110 for nominal pipe sizes 3 inches to 64 inches, and shall be either flanged or mechanical joint. Any other fittings, not included in AWWA C110 shall conform in design and performance to the requirements of this Section.

2. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings.

3. Ductile iron pipe above grade shall be flanged.

4. Mechanical and push-on type joints shall be in accordance with AWWA C111.

5. Flanges for flanged pipe shall be in accordance with AWWA C115, shall be ductile iron, shall be manufactured in the United States, shall be rated at 250 psi maximum working pressure, and shall be similar to flange Class 125 per ANSI B16.1. Where shown on the Drawings, pipe and fittings shall be furnished with flanges similar to flange Class 250 per ANSI B16.1. Fittings shall be provided with flanges having a bolt circle and bolt pattern the same as the adjacent pipe and/or mechanical devices.

6. No raised face flanges shall be used. The raised faces shall be milled flat.

7. Flange gaskets shall be full face neoprene rubber. Gasket material (push-on) mechanical joint, gasket restrained shall be neoprene.

Restraining (Water & Force Mains)

1. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

2. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

3. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

4. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

Fittings Conforming to ANSI/AWWA C110/A21.11-12 (Water & Sewer Use)

1. Restrained push-on joint fittings shall be cast ductile iron for use with ductile-iron pipe as specified above. Standard mechanical joint, and push-on joint fittings shall also be ductile iron for use with ductile-iron pipe as specified above. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, flange joints and push-on joints shall conform to ANSI/AWWA Standard C110/A21.10- 12, "Ductile-Iron and Gray-Iron Fittings ". In addition, fittings with mechanical joints and push on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings".

2. The weight of fittings shall be as given in ANSI/AWWA C110/A21.11-12 for ductile-iron fittings. The weight of mechanical joint fittings shall be as established in Tables 4 through 13. The weight of flanged joint fittings shall as stablished in Tables 14 through 21.

Fittings Conforming to ANSI/AWWA C153/A21.53-11 (Water & Sewer Use)

1. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, and push-on joints shall conform to ANSI/AWWA Standard C153/A21.53-11, "Ductile-Iron Compact Fittings ". In addition, fittings with mechanical joints and push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, “Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings" except as otherwise allowed in C153. Mechanical joint glands shall be ductile-iron only.

2. The weight of a fitting supplied under the contract shall not be less than ninety-five (95) percent of the tabulated nominal weight supplied by the manufacturer’s catalog literature for that fitting. Further, the weight of fittings supplied shall not be more than five (5) percent above the same tabulated nominal weight.

C. JOINTS AND ACCESSORIES

Joints in below-ground piping shall be flexible push-on or Mechanical joints, except where flanged joints are required to connect to valves, meters, and other equipment. Provide unrestrained buried joints except where restrained joints are specifically shown in the drawings. Joints in aboveground or submerged piping or piping located in vaults and structures shall be grooved end or flanged. Restrained joints for piping 6 inches and larger shall be TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug. Weldments for restrained joints shall be tested by the liquid penetrant method per ASTM E165. Restrained joints for field closures shall be “Megalug” by EBAA Iron.

Push-On Type Joints (Single Gasket and Single Gasket with Gasket Restraint)

Push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12.

1. The required number of gaskets for each push-on joint pipe plus one extra for every 50 joints or fraction thereof, shall be furnished with each order. The gaskets shall be shipped in suitable protective containers. All single gasket pipe shall be as manufactured by United States Pipe and Foundry Company (Tyton), by the American Cast Iron Pipe Company (Amarillo Fastite), by McWane, Inc. (Mix of Tyton and Fastite), Tyler/Union (Tyton) or approved equal.

2. Push-on joints together with both their regular and gasket-restraint gaskets shall be of the design, dimensions and tolerances of either those provided by American Cast Iron Pipe Company (Amarillo Fastite/Fast-Grip) or those provided by United States Pipe and Foundry Company (Tyton/Field Lok). No other designs will be acceptable.

3. The pressure rating shall be stamped on the restrained gasket. The restrained gasket and joint restraining system shall conform to ANSI/AWWA Standard C111/A21.11-12 rated at the following:

Size	Pressure Rating (Min.)
4-inch through 12-inch	350
14-inch through 20-inch	250
24-inch	200
30-inch and above	150

4. The restrained gasket shall be manufactured a color other than black to allow for visual inspection of the pipeline. The restrained gasket color shall be consistent throughout the system and shall be inherent within the rubber, not painted.

5. This type of joint restraint shall not be used above grade or as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe. Pipe which will be field cut shall be measured at the location of the cut to check that the pipe diameter and circumference are within the particular manufacturer's tolerances for a spigot

Mechanical Joints

1. Mechanical joints for fittings shall conform to ANSI/AWWA Standard C111/A21.11-12. Bolt holes for mechanical joints shall be equally spaced, and shall straddle the vertical centerline. Tee head bolts and hexagonal nuts for all mechanical joints in fittings shall be of high strength low-alloy steel with composition, dimensions and threading as specified in ANSI/AWWA Standard C111/A21.11-12. Glands shall be of ductile-iron construction for ductile iron fittings, and cast gray iron or ductile iron for cast gray-iron fittings.

2. The proper number of gaskets, glands, bolts and nuts, all conforming to ANSI/AWWA Standard C111/A21.11-12, plus one extra gasket for every 10 joints or fraction thereof, shall be furnished with each order. The gaskets and joint accessories shall be shipped in suitable protective containers.

3. Follower glands held in place with set screws will not be acceptable.

4. Segmented glands will not be acceptable.

Mechanical Joint Megalug-Type Restraining Systems

1. In any mechanical joint or push-on joint underground piping system restrained glands may be utilized for underground pipeline. The restraint mechanism shall consist of multiple individually activated gripping surfaces to maximize the restraint capability. Rings and gripping surfaces to be ductile iron conforming to ASTM A536 "Ductile Iron Castings." The ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded

liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

2. Foreign and domestic manufactured restrained glands are allowed for pipelines 24-inches and below unless otherwise required by the City due to Federal or State funded projects which require domestic manufacture. In sizes 30, 36, 42 and 48-inch the prior written permission of the Engineer is required to use non-domestic manufactured restraining glands. The country of origin shall be clearly identified on the restraining gland and shop drawing.

3. The City absolutely reserves the right to require other forms of restraint where in the opinion of the Engineer the use of this form of restraint is not in the best interest of the City and his decision shall be final. Use of this type of restraint is restricted to underground mechanical joint or push-on joint applications and in general may not be used above grade or as a substitute for flanged joints.

4. The Megalug restraint systems manufactured by EBAA Iron Sales, Eastland Texas, will be considered the standard of quality for comparison purposes and if the City has any doubts as to the durability, quality, or ability to restrain of a proffered substitute, the entity offering the substitute shall bear the entire burden of proving this equality to the complete satisfaction of the Engineer. Other manufacturers producing this type of restraint system shall submit data with their shop drawings showing that their restraint system has been in the marketplace for a minimum of three (3) years in this country.

5. Each thrust-resistant mechanical joint or push-on joint made up with this type of restraint and the pipe and fitting of which it is a part, shall be designed to withstand an axial thrust from an internal pipeline pressure of at least 150 psi at bulkhead conditions without reduction because of its position in the pipeline nor for support from external thrust blocks.

6. This type of joint restraint shall not be used above grade except as previously specified nor shall it be used as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe.

Outlets and Nozzles

1. Provide outlets three quarters of an inch and smaller by direct tapping Ductile Iron Pipe in accordance with AWWA C600-10, Section 4.8. Provide outlets larger than three quarters of an inch up to 2 inches by tapping the pipe and attaching a service clamp. or use a threaded welded-on boss. Use American made stainless steel clamps for exposed piping. For outlets larger than 2 inches, use a tee with a flanged outlet. For outlets larger than 2 inches in buried piping, use a tee with a restrained joint outlet.

Ductile-Iron Pipe Weldments

1. All welding to ductile-iron pipe, such as for bosses, joint restraint, and joint bond cables, as applicable, shall be done at the place of manufacture of the pipe. Perform welding by skilled welders experienced in the method and materials to be used. Welders shall be qualified under the standard qualification procedures of the ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

2. Welds shall be of uniform composition, neat, smooth, full strength, and ductile. Completely grind out porosity and cracks, trapped welding flux, and other defects in the welds in such a manner that will permit proper and complete repair by welding.

3. Material for fittings with welded-on bosses shall have a Charpy notch impact value of minimum 10 ft-lbs under the conditions defined in ANSI/AWWA C151/A21.51-09. Test completed welds by the liquid penetrant method per ASTM E165. Completed welds shall be inspected at the place of manufacture by the liquid penetrant method. Conform to the requirements specified in ASTM E165, Method A, Type I or Type II. The materials used shall be water washable and nonflammable.

D. LININGS AND COATINGS

Saltwater Intrusion and Corrosive Soils Requirements

1. The project site is considered saltwater intrusion area where the installation is subject to groundwater level variation. For these areas, the City requires the use of V-Bio Enhanced Polyethylene Encasement and ductile iron pipe with a zinc basecoat under the asphaltic topcoat. All ductile iron pipe, fittings and valves shall be wrapped with the V-Bio Polyethylene Enhanced Encasement and have the zinc protective coating factory applied.

2. For corrosive soils encountered outside of saltwater intrusion areas during construction V-Bio Polyethylene Encasement shall be installed to protect the ductile iron main, fittings and valves.

3. Zinc Basecoat: The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Ductile iron fittings shall also have a zinc protective coating sprayed on at the factory at a minimum of 3 mils.

4. The V-Bio Polyethylene Enhanced Encasement shall be accordance with AWWA C600 and ANSI/AWWA C105, “Polyethylene Encasement of Ductile-Iron Pipe Systems”. Color shall be blue for potable water and green for sanitary sewer,. Polyethylene encasement for use with ductile iron pipe systems shall consist of

three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside layer of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a corrosion inhibitor and antimicrobial biocide to control galvanic corrosion. Product: V-Bio or approved equal.

5. Polyethylene encasement for ductile-iron pipe shall be supplied as a flat tube meeting the dimensions of Table 1 in AWWA C105 and shall be supplied by the ductile-iron pipe manufacturer.

6. Plastic adhesive tape shall consist of polyolefin backing and adhesive which bonds to common pipeline coatings including polyethylene. Products: Canusa Wrapid Tape; Tapecoat H35; Polyken 934; AA Thread Seal Tape, Inc.; or approved equal.

7. Install the polyethylene to completely encase the pipe and fittings to provide a watertight corrosion barrier. Continuously secure overlaps and ends of sheet and tube with polyethylene tape. Make circumferential seams with two or more complete wraps, with no exposed edges. Tape longitudinal seams and longitudinal overlaps, extending tape beyond and beneath circumferential seams. Wrap bell-spigot interfaces, restrained joint components, and other irregular surfaces with wax tape or moldable sealant prior to placing polyethylene encasement. Minimize voids beneath polyethylene.

8. Place circumferential or spiral wraps of polyethylene tape at 2-foot intervals along the barrel of the pipe to minimize the space between the pipe and the polyethylene. Overlap adjoining polyethylene tube coatings a minimum of 1 foot and wrap prior to placing concrete anchors, collars, supports, or thrust blocks. Hand-wrap the polyethylene sheet, apply two complete wraps with no exposed edges to provide a watertight corrosion barrier, and secure in place with 2-inch-wide plastic adhesive tape.

9. Repair polyethylene material that is damaged during installation. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch-wide plastic adhesive tape. Repair polyethylene encasement at all service connections in accordance with AWWA C600- 10, Section 4.8.

Asphaltic Coating

1. All Ductile Iron pipe and fittings shall be outside-coated with an asphaltic material applied by means of the airless spray method. The exterior coating shall comply with ANSI/AWWA C151/A21.51 for this type of coating, shall be smooth without pinholes, thin, bare or overly thick areas. Smoothness shall be such that when hand rubbed, no “sand paper” feeling will be experienced and such that the spigot area will readily slide through the gasket without pulling, tearing, rolling or otherwise disturbing the sealing capabilities of the gasket. Spigot ends shall be beveled prior to coating to an extent that will permit ready insertion of the spigot through the gasket area.

E. Linings

For Water Mains - Cement-Mortar

1. Ductile Iron Pipe and fittings unless otherwise specified shall be double-thickness cement lined and seal-coated in accordance with ANSI/AWWA Standard C104/A21.4-14, "Cement Mortar Lining for Ductile-Iron Pipe and Fittings ".

For Sewage Force Mains – Ceramic Epoxy

1. The interior of all ductile iron pipes and fittings shall be lined with an epoxy lining. The epoxy lining shall be Protecto 401 Ceramic Epoxy as manufactured by the Protecto Division of Vulcan Painters, Inc. All DI pipe and fittings shall be lined with a minimum dry film thickness of 40 mils, except for the gasket groove and spigot end up to six (6) inches back from the end of the spigot which shall be lined with ten (10) mils of the material. All ductile iron pipe and fittings shall be checked for dry film thickness in accordance with the Society for Protective Coatings Paint Application Standard No. 2 (SSPC-PA 2). Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on that date. The pipe supplier shall furnish a certificate stating that lining applicator has complied with all specification requirements relative to the material, its application, and inspection. Surface preparation, number of coats, application of the lining material, and field touch-up shall be in strict accordance with the lining material manufacturer's recommendations. During the installation of the pipe, the lining material manufacturer shall provide the services of a field engineer to instruct and demonstrate to the Contractor’s personnel the procedure for the field touchup of lining where field cuts and taps were required. Holiday inspection shall be conducted using test equipment described in AWWA C210, Section 5.3.3.1. In accordance with coating manufacturer's recommendation, holiday testing may be conducted any time after the coating has reached sufficient cure.

F. INSPECTION AND CERTIFICATION

1. Inspection

   a. All ceramic epoxy lined ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PC-2 Film Thickness Rating. Re-line any pipe whose lining is below the specified minimum thickness.

   b. The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Re-line any pipe not passing the test.

   c. Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on the date.

Procedures for Sealing Cut Ends and Repairing Field Damaged Areas:

1. Remove burrs caused by field cutting of ends or handling damage and smooth out the edge of the lining if rough.

2. Remove all traces of oil, grease, asphalt, dust, dirt, etc.

3. Areas of loose or damaged lining associated with field cutting the pipe shall be repaired, if approved by the Engineer, as recommended by the pipe manufacturer. The damaged area shall be stripped back by chiseling or scraping about 1 to 2 inches into the well-adhered lining before patching. The exposed metal and the 1 to 2-inch lining overlap shall be roughened with a coarse grade of emery cloth (#40 grit), rasp or small chisel. Avoid wire brushing or similar buffing which would make the surface too smooth for good adhesion.

4. With the area to be sealed or repaired absolutely, clean and suitably roughened, apply a coat of Protecto Joint Compound by brush in accordance with the manufacturer's recommendations.

PART 3 – EXECUTION

3.0.1. General:

A. Furnish and maintain all barricades and flashing warning lights necessary to warn of the construction throughout the project.

B. Pipe and fittings shall at all times be handled with great care to avoid damage. Exercise particular care not to injure pipe coatings. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions.

C. All work shall be performed by skilled workmen experienced in pipeline construction.

D. All pipe and fittings shall be adequately supported by clamps, brackets, straps, concrete supports, rollers or other devices as shown and/or specified. Supports or hangers shall be spaced so that maximum deflection between supports or hangers shall not exceed 0.050 inch for pipe filled with liquid, but shall not be further than 6 feet apart, whichever is closer, unless otherwise shown. All pipe supports shall be secured to structures by approved inserts or expansion shields and bolts.

E. All pipe shall be thoroughly cleaned internally before being installed. All pipes, except oxygen service, air and gas, shall be flushed with water and swabbed to assure removal of all foreign matter before installation. Air and gas piping shall be tapped with a hammer to loosen scale or other foreign matter that might be within the pipe, and

then thoroughly blown with a high pressure air hose. Furnish and maintain suitable air compressor.

F. Whenever possible, the pipe shall be installed with minimum 48-inches of cover. Deviations shall not be installed without written approval by the Owner.

G. Joints may only be opened to adjust alignment by half of the AWWA or manufacturer's recommended opening (which is smaller).

H. Tie Rods: Unless otherwise indicated on the drawings, the size and number of tie rods for a joint or installation shall be as recommended by the manufacturer's design chart for a working pressure of 150 psi. Tie rods shall be installed as recommended by the manufacturer.

3.0.2. EXCAVATION FOR PIPING

A. Refer to Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

3.0.3. INSTALLATION OF PIPE, FITTINGS AND VALVES

A. General:

1. The design drawings are in some cases diagrammatic. They may not show every bend, off-set, elbow or other fitting which may be required in the piping for installation in the space allotted.

2. The centerline of the pipe shall not vary by more than 2 inches from the location shown on the plans and the top of the pipe shall not vary by more than 2 inches from the established grade, except at points where this tolerance must be changed to clear obstructions, or make connections.

3. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, a continuous trough for the pipe barrel and recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of pipe.

4. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.

5. Any pipe found defective shall be immediately removed and replaced with sound pipe.

6. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

7. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

8. Lines shall be laid straight and depth of cover shall be maintained as shown on the Plans. Grades or pipe centerline elevations are shown on the Plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken on each length of pipe and recorded. No abrupt changes in direction or grade will be allowed.

9. The pipe and fittings shall be restrained at reaction points and at any point shown on the Plans or as shown in City's Standard Details or as specified herein.

10. The pipe manufacturer shall instruct the Contractor on the making of restrained joints supplied as a part of the pipe and fitting purchase.

11. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be stored under cover and properly protected.

12. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

13. During laying operations, do not place tools, clothing, or other materials in the pipe.

14. When pipe laying is not in progress, close the ends of the installed pipe by placing a child-proof and vermin-proof plug.

15. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the Engineer prior to installation. If assembly is underwater, lubricant recommended by the manufacturer for underwater use is required.

16. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying and for lines of an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

17. Each individual length of pipe and each fitting shall be solidly and evenly bedded throughout its length on a prepared bed on the floor of the trench and not supported in position on blocks or wedges. Pipe shall only be laid when the two preceding lengths have been thoroughly embedded in place to prevent any movement or disturbance of the finished joint. Any pipe which is disturbed or found to be defective after laying shall be taken up and relaid or replaced.

18. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the Engineer, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

19. Cutting of pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

20. Mains shall be cleaned in accordance with Section 02505 "Cleaning and Testing."

21. All underground pipe shall be color coded as required by the Florida Administrative Code as specified in Section 15001 “Water Mains” and Section 15002 “Force Mains”.

22. **No request for additional compensation or Project time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the Work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the Work shall rest solely with the Contractor.**

23. Limit onsite pipe storage to a maximum of one week. Use unloading and installation procedures that avoid cracking of the lining. If necessary, use plastic sheet bulkheads to close pipe ends and keep cement-mortar lining moist. Deliver the pipe alongside the pipe laying access road over which the pipe trailer-tractors can travel under their own power. Place the pipe in the order in which it is to be installed and secure it from rolling. Sandbags may be used to support the pipe in the ditch but no pipe shall be laid on blocks, except by the written permission of the Engineer of Record. Do not move pipe by inserting any devices or pieces of equipment into the pipe barrel. Field repair linings damaged by unloading or installation procedures. Flanged joints, mechanical joints and push-on joints in cast iron pipe and fittings may be made under water.

B. Installation of Ductile Iron Pipe

1. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

2. Push-on, restrained push-on and mechanical joints in ductile cast iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with ANSI/AWWA C600 except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection.

3. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed, and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

4. Taps into ductile iron pipe for corporation stops shall be AWWA tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer.

    a. For Water Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

    b. For Sewage Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the lining on the inside of the pipe shall be repaired with ceramic epoxy joint compound in accordance with manufacturer's recommendations. The exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

5. Any work within the pipe shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired as recommended by the pipe manufacturer or the pipe section replaced as required by the Engineer.

6. Sandbags may be used to support the pipe in the trench, but no pipe shall be laid on blocks, except by the written permission of the Engineer.

7. Since some settling of the pipe may occur due to unfavorable ground conditions the Contractor shall exert every care in laying the pipe to the required grade. Prior to backfilling, the pipe grade and settlement shall be checked, and the Contractor shall correct any excessive deflections or high points in the line to the satisfaction of the Engineer and at no additional cost to the City.

8. Unless otherwise approved by the Engineer, the pipeline shall be cleaned at intervals not to exceed 30 lengths of pipe. Cleaning methods shall meet the Engineer's approval, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

9. Connections to existing mains shall be coordinated as required under Section 01110 "Special Project Requirements", 1.0.6. Connections to Existing Piping.

3.0.4. FIELD QUALITY CONTROL

A. All water mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. The test pressure for potable water mains shall be 150 psi. The test pressure for sewage force mains shall be 100 psi. Test Ductile Iron Pipe mains in accordance with ANSI/AWWA C600 latest edition once all backfill is in place and fully compacted, and after all thrust blocks have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the City as a condition precedent to the approval and acceptance of the system.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall provide all tools, supplies, materials, equipment, and labor necessary for furnishing, epoxy coating, installing, adjusting, and testing of all valves and appurtenant work, complete and operable, in accordance with the requirements of the Contract Documents. Where buried valves are shown, the Contractor shall furnish and install valve boxes to grade, with covers, extensions, and position indicators.

B. The provisions of this Section shall apply to all valves and valve operators specified in the various sections of these specifications except where otherwise specified in the Contract Documents. Valves and operators in particular locations may require a combination of units, sensors, limit switches, and controls specified in other sections of these specifications.

C. .All valves specified herein shall be furnished with an affidavit from the manufacturer(s) certifying that the valves furnished comply with the applicable provisions of the AWWA specifications, as modified herein. That they were factory tested in accordance with the AWWA Standard Leakage and Hydrostatic Tests as modified herein, with a certified test report furnished to the Department for each valve

1.0.2. REFERENCE SPECIFICATION, CODE AND STANDARDS

A. Codes: All codes, as referenced herein, are specified in Section 01090 "Reference Standards."

B. Commercial Standards:

ANSI/AWWA C500	Standard for Metal-Seated Gate Valves for Water-Supply Service
ANSI B16.1 125,	Gray Iron Pipe Flanges and Flanged Fittings, Classes 25,
ANSI B16.5	Pipe Flanges and Flanged Fittings
ANSI/ASME B1.20.1	Pipe Threads General Purpose (Inch).
ANSI/ASME B31.1	Power Piping
ASTM A36	Specification for Carbon Structural Steel
ASTM A48	Specification for Gray Iron Castings

ASTM A126	Specification for Gray Iron Castings for Valves, Flanges, Pipe Fittings
ASTM A536	Specification for Ductile Iron Castings
ASTM B61	Specification for Steam or Valve Bronze Castings
ASTM B62	Specification for Composition Bronze or Ounce Metal Castings
ASTM B148	Specification for Aluminum Bronze Sand Castings
ASTM B584	Specification for Copper Alloy Sand Castings for General Applications
ANSI/AWWA C504	Rubber Sealed Butterfly Valves
AWWA C508	Swing Check Valves for Waterworks Service, 2 Inches Through 24 Inches NPS
ANSI/AWWA C509	Resilient Seated Gate Valves, for Water-Supply Service
AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants

1.0.3. SUBMITTALS

A. Shop Drawing: Shop drawings of all valves and operators including associated wiring diagrams and electrical data, shall be furnished as specified in Section 01300 "Submittals".

B. Valve Labeling: The Contractor shall submit a schedule of valves to be labeled indicating in each case the valve location and the proposed wording for the label.

C. Affidavit from the manufacturers certifying that the valves furnished for this Project comply with the most recent applicable provisions of the AWWA Standards as modified herein.

D. AWWA Standard Leakage and Hydrostatic Test factory test with certified test report for each valve.

E. "Pre-Approved Product List," shop drawings, test and compliance certifications of all valves.

1.0.4. QUALITY ASSURANCE

A. Valve Testing: Unless otherwise specified, each valve body shall be tested under a test pressure equal to twice its design water working pressure.

B. Bronze Parts: Unless otherwise specified, all interior bronze parts of valves shall conform to the requirements of ASTM B62.

PART 2 – PRODUCTS

2.0.1. VALVES

A. General: The Contractor shall furnish all valves, valve operating units, stem extensions, and other accessories as shown or specified. All valves shall be new and of current manufacture. Where buried, these valves shall be provided with valve boxes, covers and valve extensions.

B. All valves shall be products of domestic manufacturing firms, as per the City's Public Works Manual. The manufacturer shall have a minimum of five (5) years of experience in manufacturing valves of the sizes required for this project.

C. Valve bodies shall be epoxy coated cast iron conforming to ASTM A126, Grade B, ASTM A48, Class 40 or Ductile Iron ASTM A536, Grade 65 45 12. Where required to meet design operating conditions, valve bodies shall be manufactured of higher strength materials. Valve bodies shall have integral hubs for housing shaft bearings and seals'."

D. All castings shall be clean and sound, without defects of any kind and no plugging, welding or repairing of defects will be permitted. All bolt heads and nuts shall be hexagonal conforming to ANSI B18.2 and shall be type 316 American made stainless steel. Gaskets shall be full face and made of natural or synthetic elastomers in conformance with ANSI B16.21 suitable for the service characteristics, especially chemical compatibility and temperature. Nonferrous alloys of various types shall be used for parts of valves as specified. Where no definite specification is given, the material shall be the recognized acceptable standard for that particular application.

E. All buried valves shall be provided with valve boxes unless otherwise indicated. Valves boxes shall be as per Section 05550 "Castings"

F. All buried valves and other valves located below a concrete operating deck or level, specified or noted to be key operated, shall have an operator to finish grade or deck level, non-rising stem, a 2-inch square AWWA nut with skirt, and cover or box and cover, as may be required.

G. Protective Coating: Except where otherwise specified, ferrous surfaces, exclusive of American made stainless-steel surfaces, in the water passages of all valves 4 inch and larger, as well as the exterior surfaces of all submerged valves, shall receive a fusion bonded epoxy coating in accordance with AWWA C550. Flange faces of valves shall not be epoxy coated. The Contractor, through the valve manufacturer, shall

certify in writing that such coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these specifications.

H. Valves shall be furnished with operators, provided by the valve manufacturer. All operators of a given type shall be furnished by the same manufacturer. All valve operators, regardless of type, shall be installed, adjusted, and tested by the valve manufacturer at the manufacturing plant. Operator orientation shall be verified with the Engineer prior to installation.

I. All operators, unless otherwise specified, shall turn counter-clockwise to open. Operators shall have the open direction clearly and permanently marked. All valve operators, manual, motor and pneumatic, shall be provided with the valve by the valve manufacturer.

J. All butterfly valves shall have a torque guard installed.

K. Where buried, the valves shall have extensions with square nuts or floor stands.

PART 3 – EXECUTION

3.0.1. VALVE INSTALLATION

A. General: All valves , operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. Valves shall be firmly supported to avoid undue stresses on the pipe.

B. Access: All valves shall be installed to provide easy access for operation, removal, and maintenance and to avoid conflicts between valve operators and structural members.

C. General:

1. Resilient-seated gate valves shall be placed in vertical positions only. Horizontal placement of resilient-seated gate valves, even if supplied with bevel gearing, shall not be accepted.

2. The installation of all buried valves shall include a valve box and riser or manhole, as appropriate, in accordance with the City's Standard Details.

3. Riser pipes, valve boxes and manhole lids shall be carefully centered and set flush with the finished grade if in paving, or with the top of the ground if out of paved areas. All valve boxes shall be held in position with concrete as shown on the City Standard Details.

4. All valves shall be checked before installation to make sure they operate properly. All valves shall be thoroughly cleaned before installation, and during installation

they shall be carefully aligned vertically and/or horizontally as indicated on the Plans.

5. The Contractor is advised that he is required to furnish all labor, materials and equipment necessary to pressure test each valve furnished by the City, bi-directionally, prior to installation, to the satisfaction of the Engineer.

6. All mechanical joint ended valves shall be connected to the abutting pipe or fittings in accordance with the requirements of Section 15060 “Piping and Fittings”.

7. Upon completion of the Project, but prior to final acceptance, the Contractor in the presence of the Engineer, shall fully open each valve installed by him, except at connections to existing City mains. For valves 16-inch and larger, the Contractor shall count the number of turns required to operate each valve from a completely closed to a fully opened position, and shall paint the number on the bottom of the valve's valve box lid or manhole cover. **VALVES AT CONNECTIONS TO EXISTING CITY MAINS SHALL ONLY BE OPERATED BY CITY FORCES.**

8. Valves which are a part of the section of pipe being installed encased with polyethylene, shall also be encased with polyethylene in accordance with ANSI/AWWA C105/A21.5 Method A, B or C.

END OF SECTION

15102 TAPPING SLEEVES AND TAPPING VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install tapping sleeves and tapping valves, as shown on the Plans and/or as specified herein. All items not specifically mentioned in these specifications or noted on the Drawings, but which can be reasonably inferred as necessary to make a complete working installation, shall be included.

B. Tapping sleeves, where shown on the Plans, shall fit the existing pipe to be tapped and the Contractor shall determine the outside diameter and type of pipe before ordering the sleeve. Field verification of dimensions is directed since actual locations, distances and levels will be governed by actual conditions. The Contractor shall adjust his work to conform to said field conditions.

C. The Contractor is responsible for having the work properly scheduled, location excavated in accordance with Trench Safety requirements, pipe restrained, excavation dewatered and all conditions ready for the tap to be made.

1.0.2. RELATED WORK

Section 15100 “Valves, General”

Section 15120 “Gate Valves”

1.0.3. MANUFACTURE

A. All valves shall be the products of domestic manufacturing firms which have been regularly engaged in the production of valves for at least 5 years. All valves specified herein shall be tested at the factory in accordance with the AWWA Standard Leakage and Hydrostatic Test as modified herein and a certified test report shall be furnished for each valve upon request.

1.0.4. SUBMITTALS

A. Shop Drawings: Submit shop drawings for all tapping sleeves and valves not on Pre-Approved products List.

B. Complete technical data and information on tapping sleeves for pipe other than cast iron shall be submitted to the City for approval on an individual basis.

PART 2 – PRODUCTS

2.0.1. TAPPING SLEEVES

A. Tapping saddles approved for use by the City are shown on Sheet 6.0 Tapping Sleeves of the Pre-Approved Product List.

B. Tapping sleeves with MJ outlets to connect MJ gate valves shall be constructed of 316 stainless steel. This shall apply to both water and sewer applications unless otherwise approved by the City. These units shall be manufactured of AISI Type 316 stainless steel passivated after welding or Type 316L. Threaded fasteners shall be Type 316 and gasketing shall be Neoprene, EPDM, or Nitrile for sanitary sewer use and SBR for potable water. A standard resilient-seated gate valve shall be attached to the MJ outlet of the sleeve.

C. Cast Iron tapping sleeves shall be designed to withstand a working pressure of at least 150 psi. Cast iron tapping sleeves shall be used with a flanged tapping valve.

D. Full size taps (8-inch tap on an existing 8-inch main, 12-inch tap on an existing 12-inch, etc) main shall be made with a 316 stainless steel tapping MJ outlet sleeve. The inside diameter of the mechanical joint outlet fitting and branch shall be larger in diameter than nominal to allow the use of a full-size cutter.

E. Tapping saddles for concrete pipe sewer mains 42-inches and larger may use a fusion bonded epoxy carbon steel saddle with 316 stainless steel straps. Large diameter saddles shall be individually approved by the City on a case by case basis.

F. Each mechanical joint on the tapping sleeve shall be furnished complete with tee-head bolts and nuts complying with ANSI/AWWA C111/A21.11 "Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings" (latest edition). Tee-head bolts and hex nuts shall be of high strength cast iron. Bolts and nuts to join the two halves of the sleeve together shall be standard carbon steel, hex, or tee-head bolts and nuts which have been galvanized.

G. The tapping sleeves, including outlet flanges shall be as dimensioned and thicknesses shall be as required by AWWA/ANSI C110/A21.10. The tapping sleeves shall be mechanical joint ended, on the run, and shall have a connecting flange outlet, with centering groove (for all valves size 12-inch and below and for valves above 12-inch if available from the manufacturer), for connecting to the tapping valve. For tapping sleeves with outlets 12 inches and smaller, the connecting flange joint between the tapping sleeve and the tapping valve shall be in compliance with all applicable provisions of MSS Standard Practice SP60, latest revision, as developed and approved by the Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street N.E. Vienna, VA. 22180. For tapping sleeves with outlets larger than 12 inches, the connecting flange must provide a matching fit with tapping valves by other manufacturers.

H. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA

Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

I. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

J. The sleeves shall be suitable for use with ductile iron pipe conforming to ANSI/AWWA Standard C151/A21.51, "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids", with wall thickness and outside diameter as specified in Table 51.4 and 51.5. The sleeves shall also be suitable for use with other cast iron pipe with differing outside diameters and other types of pipe where required.

K. Each tapping sleeve shall be Factory Hydrostatically tested on pipe to verify proper fit and weld integrity with zero leakage.

2.0.2. TAPPING VALVE

A. Resilient-seated tapping valves shall have a mechanical joint outlet end conforming to ANSI/AWWA Standard C111/A21.11-00, "Rubber Gasket Joints of Ductile-iron and Gray-Iron Pressure Pipe and Fittings," for connection to new piping and a flange inlet with centering ring, for connecting to the tapping sleeve.

B. The tapping valves shall conform to the requirements listed for gate valves, including bypass valve when applicable, shall be furnished complete with all joint materials. Joint materials for the flanged inlet shall be ANSI-sized and approved and shall include a 1/8-inch thick full-faced neoprene gasket, and hot dipped galvanized carbon steel bolts and nuts with internal threads tapped or retapped after galvanizing. The flange inlet gaskets shall conform to the gasket material and property requirements set forth in ANSI/AWWA Standard C111/A21.11-00. All gaskets and seals shall be neoprene, Buna-N, or approved equal, but not natural rubber. The mechanical joint outlets shall include the necessary joint materials conforming to the requirements of joint materials for mechanical joint ended gate vales as specified in Section 5.07.3 "Valves - Resilient Seated Gate Valves." Bolt holes in the flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Resilient-seated tapping valves shall be as manufactured by U.S. Pipe and Foundry Co., American Flow Control, Mueller, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Taps 20-inches and smaller for water mains will be made by City forces. Taps of any size into concrete mains shall be done by a tapping specialist with credentials acceptable to the Department.

B. Taps of any size into concrete or PCCP water mains shall be made by a tapping specialist with credentials acceptable to the City.

C. Tap of any size to sewage force mains shall be made by a tapping specialist with credentials acceptable to the City.

D. The tapping specialist shall be from any of the following:

1. EA Tapping Services

2. Hydra-Stop, a division of ADS LLC.

3. Rangeline Tapping Service, Inc.

4. T.D.W. Services Inc.

5. or approval equal

E. The Contractor shall notify the Engineer at least seven days in advance of when he will be ready to make the connection and shall have the tapping valve installed on the existing main with the new equipment satisfactory pressure tested and sufficient excavated work areas prepared for the City forces when they arrive to make the tap.

F. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized at design test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the Engineer, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap. No leakage shall be permitted at any joint in either the tapping sleeve/saddle or valve.

G. The tapping valve requires the installation of a cast iron riser pipe complete with valve box and cover, centered over the operator, and set in concrete.

H. All necessary sheeting, shoring, dewatering, excavation, backfill and compaction, surface repairs, and other items and work appurtenant to or incidental to the work shall be performed by the Contractor.

I. For Concrete mains the tapping saddle shall be tested after installation at a pressure of 5 psi lower than the operating pressure of the pipeline at the time of the test. A

pressure reading shall be taken from an air release valve prior to performing the pressure test on the saddle.

J. The Contractor shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. The test shall be conducted in the presence of the City's Inspector. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve.

K. When the invert of the tapping valve is under water, interlocking sheeting and tremie concrete shall be used, unless otherwise approved by the City. Seal the perimeter of all pipes passing through the sheeting below the water table. Only minimum seepage will be permitted. The cofferdam must be designed and sealed by a State of Florida, P.E. No work will be permitted within the cofferdam until it is demonstrated to the City to be dry. Approval to remove the initial water in the cofferdam must be obtained from the City and other governmental agencies jurisdiction over the work.

3.0.2. TAP BY CITY FORCES

A. The Contractor shall notify the City at least 48-hours in advance of when he will be ready to make the tap and shall have the tapping sleeve and valve installed on the existing main and satisfactorily tested as specified below, with a sufficient excavated work area prepared for the City forces when they arrive to make the tap.

B. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized to the required test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the City's Inspector, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap.

C. A crane or other suitable equipment as approved by the City, shall be furnished by the Contractor to unload the tapping machine, position it in the trench for bolting to the valve, and to reload it after the tapping operation has been completed.

D. City forces will connect the tapping machine to the valve, and disconnect it after the tap is complete; however, the Contractor shall furnish suitable devices or material to support the machine in the trench for proper alignment, as required by the City. The Contractor shall aid the City's forces whenever and to whatever extent necessary for the tapping operation to be performed efficiently and without any undue time lost.

3.0.3. TAPPING BY NON-CITY FORCES

A. The Contractor shall comply with all applicable provisions of Subsections 3.01 and 3.02, above, including installation and pressure testing of tapping sleeve and valve in the presence of the City's Inspector.

B. Since cutting equipment used for this type of installation is of a special design, the Contractor shall make provisions for furnishing a tapping specialist to perform actual tapping operation. The qualifications of the tapping specialist shall be forwarded to the City prior to any tapping work. The Contractor shall also furnish all incidental equipment necessary to operate the tapping machine and perform a complete operation to the satisfaction of the Engineer.

C. The tapping valve shall be installed in the horizontal position with the operator in the vertical position, and shall include a valve box cover. Tapping valves shall be left in the closed position.

D. All tapping operations shall be conducted under the direct supervision of the previously approved tapping specialist. All operations shall have prior approval of the City.

3.0.4. RECORD DRAWINGS

A. Record Drawings shall be prepared in accordance with Section 01720.

B. The location and elevation for each valve, tapping outlet, fitting, service line and other appurtenances along the pipeline shall be recorded by the Contractor's Florida Registered Surveyor and Mapper.

END OF SECTION

15120 GATE VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install gate valves complete and operable, including all appurtenances and accessories.

B. The City will permit the use of resilient seated type gate valves in potable water systems, as described herein

C. Gate valves shall be used on mains 3-inch diameter to 12-inch diameter

PART 2 – PRODUCTS

2.0.1. GATE VALVES, GENERAL

A. As used herein, "ANSI" denotes the American National Standards Institute; "AWWA" denotes the American Water Works Association; and "ASTM" denotes the American Society for Testing and Materials.

B. Gate valves 4-inch through 6 inch diameter shall be of the non-rising stem design, shall fully comply with the requirements of AWWA C509 for resilient-seated gate valves. Gate valves shall be designed for a minimum working pressure of 250 psi and a test pressure of 500 psi. Gate valves shall be manufactured by American, Mueller, or approved equal.

C. Gate valves shall have a disk on top of the operating nut, specifying number of turns and direction to open.

D. All work performed according to the standards cited above, except prototype testing, shall be subject to inspection and acceptance by the City or its representatives who shall have access to all places of manufacture where these valves are being produced and tested. Suppliers shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include Country, City, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

E. All valves shall conform with ANSI/NSF Standard 61, "Drinking Water System Components-Health Effects".

F. Grades B and C bronze as listed in Table 1 of AWWA C500, latest revision shall not be used in the fabrication of any of the various valve types listed in this specification. Aluminum bronzes, if used, shall not dealuminize and the method of preventing this shall be fully described in the submittal.

2.0.2. RESILIENT SEATED GATE VALVES

A. Resilient-seated gate valves shall be manufactured in accordance with the applicable provisions of ANSI/AWWA C509, "Resilient-Seated Gate Valves for Water Supply Service," latest revision, as modified herein.

B. All resilient-seated gate valves shall have nonrising stems (NRS) and are to be installed under buried and/or submerged conditions.

C. The design working water pressure for all resilient-seated gate valves shall be a minimum of 250 psig for all sizes. In addition to the pressure requirements, the valve assembly and mechanism shall be capable of withstanding an input torque of 200 ft-lbs for valves 4-inch and smaller, and 300 ft-lbs for valves 6-inch and larger.

D. With the valve open the unobstructed waterway shall have a diameter not less than the full nominal diameter of the valve.

E. All valves specified herein shall be furnished with an Affidavit of Compliance from the manufacturer as required by ANSI/AWWA C509. This Affidavit of Compliance shall state that the valve and all materials used in its construction conform to the applicable requirements of the standard under which the valve is manufactured and the City's specifications and that all tests specified in the applicable standard have been performed and all test requirements met. The manufacturer shall have been engaged in the production of valves for at least five (5) years.

F. Submit to the Engineer for approval:

1. Catalogue Data: Including illustrations and a parts list that identifies the materials used for various parts. The information shall be in sufficient detail to serve as a guide in the assembly and disassembly of the valve and for ordering repair parts.

2. Weight information: Provide a statement of the net assembled weight for each size of valve exclusive of joint accessories.

3. Assembly Drawings: One set of drawings showing the principal dimensions, construction details, and materials used for all parts of the valve.

G. Contractors shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include country, city, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

G. Valve Body:

1. Gate valve body and bonnet shall be cast iron conforming to ASTM A126, Class B with resilient seat gate and O-ring seals. The gate shall be cast iron with a vulcanized rubber coating with no metal to metal contact when in the fully closed position and a smooth unobstructed waterway when in the fully opened position.

2. All ferrous metal items in contact with the line fluids, except gray or ductile cast iron, shall be AISI Type 316 stainless steel. Valve body and bonnet gaskets shall be rubber or rubber composition, inorganic mineral fiber and paper are not acceptable. Rubber and rubber composition materials shall be suitable for use in water containing chlorine or chloramines and in sanitary sewage.

3. Valves shall be flanged or mechanical joint, with non-rising stems, and with a 2-inch square standard AWWA operating nuts unless otherwise specified or required by the City or designee.

H. External Ferrous Items:

1. All external ferrous items, except gray or ductile cast iron, shall be stainless steel.

2. All internal ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

I. Resilient Seats:

1. Shall be applied to the gate only and shall seat against a corrosion-resistant surface. The surface shall be nonmetallic, applied in a manner to withstand the action of line fluids and the operation of the sealing gate under long-term service and shall coat all surfaces in contact with the liquid. The nonmetallic surface interior surface coating shall conform with ANSI/AWWA C550. Resilient seats shall be bonded or mechanically attached to the gate. No natural rubber products will be acceptable. Seat materials shall be EPDM, Nitrile or approved equal and shall have excellent resistance to sewage combined with good to excellent resistance to compression set. The method used for bonding or vulcanizing the resilient seat material to its substrate shall be proven by ASTM D429, "Test Methods for Rubber Property-Adhesion to Rigid Substrates," Method A or B. For method A, the minimum strength shall not be less than 250 psi. When Method B is applicable, the peel strength shall not be less than 75 lb/in. All exposed mechanical attaching devices and hardware used to retain the resilient seat shall be of AISI Type 316 stainless steel.

J. Mechanical Joint Valves:

1. Shall have ends complying with ANSI/AWWA C111/A21.11. Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place with set screws will not be acceptable. Bolt holes in the flanges of the mechanical joint shall be equally

spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves for use in sewage shall have neoprene gaskets.

K. Painting and Coatings:

1. The exterior valve surface shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-494B. Paintings and coatings shall conform to the requirements of ANSI/AWWA C550 for the interior of the valve. Interior and exterior coatings shall conform with ANSI/AWWA C515, Section 4.5.2 "Coating."

L. Testing:

1. All production tests shall be performed on all valves supplied without exception. Operation, shell and seat tests shall be performed as specified in ANSI/AWWA C509.

PART 3 – EXECUTION

3.0.1. GENERAL

A. All valves shall be installed in accordance with provisions of Section 15095 “Vales, General.”

END OF SECTION

15125 PLUG VALVES

PART 1 – GENERAL

1.0.1. SCOPE

A. The Contractor shall furnish and install plug valves, complete and operable, as shown and specified herein, appurtenances, operators, and accessories.

B. Plug Valves 30-inch and larger shall have the actuator installed with a manhole structure. Space limitations may preclude full structures underground.

C. Plug valves are required for this project for the 30-inch force main. The substitution of plug valves with resilient-seated gate valves will not be accepted.

1.0.2. RELATED WORK SPECIFIED ELSEWHERE

A. Section 15100, “Valves, General”

1.0.3. QUALITY ASSURANCE

A. The plug valve manufacturer shall have a line of parts available to support the plug valve furnished to the City. Manufacturers with a history of unsatisfactory performance or discontinuing spare parts shall be disapproved.

PART 2 – PRODUCTS

2.0.1. PLUG VALVES

A. Plug valves shall be of the non-lubricated, eccentric seating plug type with synthetic rubber-faced plugs. All valves shall be provided with limit stops and rotate 90° from fully open to fully shut. The minimum working pressure for all valves shall be 150 psi for valves through 36-inch, and the test pressure shall be at least 270 psi for valves up through 12-inch and at least 230 psi for valves 14-inch and larger. Plug valves located at the discharge end of a pump station shall have a 100 percent port area. Plug valve 6- inch and smaller with an 80 percent minimum port area are acceptable only at locations away from lift stations. Plug valves 8-inch and larger shall be full opening with 100 percent port area. Plug valves, 8-inch and smaller shall be designed for operation in a horizontal pipeline with the valve shaft in a vertical position. Plug valves larger than 8- inch shall be designed for operation in a horizontal pipeline, with the valve shaft in a horizontal position and the operating shaft in a vertical position. The plug valves shall be as manufactured by DeZurik Company, Pratt, Kennedy, or equal as approved by the City, and shall be the standard product of a manufacturer which has produced and sold such equipment for a period of at least five (5) years. Valves shall be suitable for buried, submerged service

B. Mechanical joint buried plug valves shall have ends complying with ANSI/AWWA Standard C111. "Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings". Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place by set screws will not be acceptable. Bolt holes in flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves shall have neoprene gaskets. Plug valves shall be operated with a standard AWWA 2-inch square nut through a totally enclosed worm gear actuator

C. Plug valve body and plug shall be cast iron conforming to the requirements of ASTM Standard A126, “Gray Iron Castings for Valves, Flanges and Pipe Fittings”, Class B, and all nuts, bolts, springs, washers, and similar component items exposed to the operating fluid shall be AISI Type 316 stainless steel. Resilient plug facing shall be of neoprene.

D. Plug valves shall be furnished with a corrosion-resistant seat consisting of a welded-in overlay of high nickel content on all surfaces contacting the plug face and shall comply with ANSI/AWWA Standard C507, "Ball Valves, 6 In. Through 48 In. (150 mm Through 1200 mm)", Section 3.2.

E. Plug valves shall be furnished with replaceable, sleeve-type AISI Type 316 stainless steel bearings in the upper and lower journals, and shall comply with ANSI/AWWA Standard C507, Section 3.2.

F. Plug valve shaft seals shall be designed for replaceable, manually adjustable, multiple ring "V" or "U" type packing of Buna-N or neoprene. The valves shall be of the bolted-bonnet type and shall comply with ANSI/AWWA Standard C507, Section 3.

G. Plug valves shall have stops at the fully-opened and fully-closed positions.

H. Plug valves shall be designed for drip-tight shut-off in wet service applications at pressure differentials up the full rating of the valve with pressure in either direction. Plug valves shall be provided with a manual operator sized to suit the maximum differential pressure across the valves. Minimum plug valve operator output torques shall equal or exceed the values specified in the following table:

Plug Valve Size 150 PSI	Required Actuator 100 PSI	Output Torque
2’’	1,063 ft-lbs	1,438 ft-lbs
14’’	1,683 ft-lbs	2,225 ft-lbs
16’’	2,213 ft-lbs	3,013 ft-lbs
18’’	3,300 ft-lbs	4,500 ft-lbs
20’’	4,388 ft-lbs	5,975 ft-lbs
24’’ (100%)	10,000 ft-lbs	12,790 ft-lbs
30’’ (100%)	15,875 ft-lbs	19,550 ft-lbs

I. Manufacturer shall supply operators producing larger output torque values if so required by their valves, but in no case shall operator output torque be less than that shown for the particular valve size and pressure.

J. In addition, the operator shall be capable of withstanding an input torque of 300 ft.lbs. on the operating nuts or a pull of 200 pounds on the handwheel without damage to operator components between the input and the stops. Operators on valves 30-inch and larger shall also be equipped with an AWWA input shaft stop.

K. All external ferrous items, except cast iron, shall AISI Type 316 stainless steel. All internal and external ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

L. Manual operators for valves 8-inch and smaller shall be lever actuated unless otherwise specified elsewhere herein.

M. Manual operators for valves 10-inch to 24-inch shall be totally enclosed worm gear type, permanently lubricated, suitable for buried and/or submerged conditions.

N. Manual operators for valves 30-inch and larger shall be totally enclosed worm gear operators, permanently lubricated, suitable for buried and submerged operation, and shall in accordance with ANSI/AWWA Standard C504, with AWWA input shaft stop.

O. Manual operators shall be provided with completely enclosed mounting brackets or adapters. The operators shall be equipped with adjustable stops to prevent overtravel in both the open and closed position with standard 2-inch square operating nuts with skirts as listed elsewhere herein, or with handwheel if for above ground service. All plug valves shall open by turning the operating nut or handwheel counterclockwise. Orient operators with horizontal plug shafts such that the plug rotates upward upon opening.

P. All operator components between the operating nut and the adjustable stops shall be designed to withstand, without damage, an input torque of 300 ft. lbs.

Q. The exterior valve surfaces shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-434A.

R. Testing: Plug valves shall be tested in accordance with ANSI/AWWA C504, “AWWA Standard for Rubber-Seated Butterfly Valves”, Section 5, Subsection 5.2. The performance test (Subsec. 5.2.1) and hydrostatic test (Subsec. 5.2.3) shall be performed as stated, however the leakage test (Subsec. 5.2.2) shall be performed bidirectionally; first on one side of the valve, and then on the other. The manufacturer shall furnish a certified test report with every valve stating that the valve has met the requirements of the tests.

S. The manufacturer shall certify that the plug valves are capable of operating in continuous duty service under these pressures and flow conditions.

T. Each valve shall by hydrostatically tested and tested for bubble tightness after the operator has been mounted and adjusted. Copies of the hydrostatic and leakage test certification and certification of conformance shall be provided to the City or designee

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall install valves with seats on the downstream side and unless shown otherwise, set valve (above 8-inch size) with the main axis of the plug horizontal.

B. All valves shall be carefully inspected, fully opened and then tightly closed and the various nuts and bolts shall be tested for tightness before installation. Special care shall be taken to prevent any foreign matter from becoming lodged in or on the valve seat. Any valve that does not operate correctly shall be removed and replaced.

C. The installation of buried eccentric plug valves shall also include furnishing and installing concrete pads and ductile iron or PVC C900 riser pipes complete with valve boxes and covers set in concrete. Each valve operator shall be supplied with an extension shaft, nut and data plate supplied by the valve manufacturer which shall be supported as previously specified and shown on the Plans.

D. The one-piece extension shaft, complete with over-torque protection device, pinned AWWA 2-inch operator nut, coupling and coupling pin, and centering identification plate, shall be installed with the valve as shown in the City Standard Details. After the exact required length of the shaft has been determined by field measurements during the installation of the valve, the shaft shall be cut to size.

E. The coupling shall be welded to the sized shaft and installed to the valve operator shaft with coupling pin. All welds shall be cleaned and covered with Carboline, Inc. Bitumastic 50, or approved equal.

F. The centering identification plate, when installed, shall rest on top of the valve riser pipe as shown on the City Standard Details with the valve data information positioned on top.

G. For all quarter-turn plug valves installed, the Contractor shall paint the underside of the valve box cover with red paint.

END OF SECTION

15130 MISCELLANEOUS VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install miscellaneous valves as shown in the drawings and as specified herein, complete and operable including accessories and, where designated, operators, all in accordance with the requirements of the Contract Documents.

1.0.2. RELATED WORK

A. Section 15095 “Valves, General”.

PART 2 – PRODUCTS

2.0.1. AIR RELEASE VALVES

A. The air release valve and flushing valve assemblies shall be installed in accordance with the details shown in the City Standard Details.

B. Taps into ductile iron pipe for air release and flushing valve assemblies shall be AWWA Tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer. After the tap has been made, and the corporation stop installed on a pipe conveying potable water, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

For Water Mains - Air Release Valve Assemblies (ARVs):

1. The installation of air release valves shall include excavation, tapping the ductile iron pipe, corporation stop, angle valve, PVC pipe and fittings, complete with valve boxes and covers, set in concrete, backfilling and compaction, and all other appurtenant items and work in accordance with the City’s Standard Details.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene

For Sewage Mains – Automatic Air Release Valves (ARVs):

A. Sewage air release valves shall be specifically designed for use on Sewage Force Mains. Valves shall automatically release air gas or vapor under pressure during system operation, NO galvanized pipe allowed.

B. Automatic Air Release Valve Assemblies (AARVs):

1. The body of these valves shall be conical shaped to maintain maximum air gap with the spring-loaded float and seal plug connection combining to ensure no contact between the sewage and the seal.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene.

3. The body, cover flange, and lower flange shall be constructed of reinforced nylon, and shall have a funnel shaped lower body to automatically drain sewage back into the system.

4. All internal metal parts are to be made from corrosion resistant 316 stainless steel produced in America, with all operating parts, in the upper and lower sections, to be nonmetallic plastic/rubber materials.

5. The hinge for operation for the opening and closing of the seal on the orifice shall be made of EPDM rubber.

6. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials.

7. The lower bowl of the ARV shall be funnel shaped to assure the raw sewage to run back into the pipe.

8. All hardware shall be of stainless steel 316 produced in America bolts and nuts, and the entire valve, except to upper outlet, shall be constructed of reinforced nylon material.

9. All valves shall be equipped for backflushing maintenance with easy connection or disassembly.

10. Valves with a total weight of more than 10 pounds shall be anchored to relieve the excessive weight to the saddle and pipe. Those valves weighting less than 10 pounds will not be required to be anchored.

11. The ARV shall be no taller than 19-inches. The connection on all pipelines shall be the following sizing with an isolation valve of the same size:

NOMINAL PIPE DIAMETER (INCHES)	CONNECTION
8-inch and smaller	2-inch threaded

10-inch thru 16-inch	3-inch flangle/threaded
18-inch and larger	4-inch flange/threaded

12. All air and vacuum combination release valves shall be ARI Model D-025P, or approved equal.

13. Smith Blair 317 series stainless steel tapping saddle shall be used, or approved equal.

14. Size of valve shall be calculated to meet the required flow/design conditions.

2.0.2. PLASTIC BALL VALVE

A. Plastic ball valves shall be used at all PVC pipe installations where required, and be made of polyvinyl chloride (PVC). All valves shall have manual operators, unless otherwise specified or shown.

B. Construction: All plastic ball valves shall have union ends or flanged ends to ANSI B.16.5, class 150, for easy removal. The balls shall have full size ports and Teflon seats. All body seals, union O-ring seals, and stem seals shall be Viton. The valves shall be suitable for a maximum working non-shock pressure of 150 psi at a temperature of 105°F. Body, ball, and stem shall be PVC conforming to ASTM D1784, Type 1, Grade 1. Seats shall be Teflon. O-ring seals shall be Viton. Valve ends shall be of the double-union design. Ends shall be socket welded except where threaded or flanged-end valves are specifically shown in the drawings. Valves shall have handle for manual operation.

C. Suppliers or Equal: NIBCO Inc., (Chemtrol), Watts Regulator Company, ITT Engineered Valves.

2.0.3. GLOBE VALVES

A. The globe valves for pipe 3 inches and smaller shall be handwheel operated, shall have ends threaded to American Tapered Pipe Thread (NPT) Standard, shall be designed for 150-pound working pressure and shall be bronze body equal to Crane Company No. 1, Nibco Inc., or approved equal.

2.0.4. GATE VALVES (SMALL)

A. Gate valves, smaller than 3-inches in size, unless otherwise noted on the approved Plans, shall be minimum 125 psi, bronze body, double disc, rising stems with heavy duty bronze handwheels. Valve shall have a full bore able to allow passage of a drill of the nominal valve size and be used in place of a corp. stop for tapping the main. James Jones Co. Model J-372, Stockham, Bermaid or approved equal. Ends should be as shown or indicated on the Plans. Each valve shall open by turning the handwheel counterclockwise. Valves shall be designed for at least 125 psi working pressure.

Valves with reduced bores or appreciably lighter in weight than those specified will not be acceptable.

B. See Section 15120, "Gate Valves", for gate valves not specified above.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. All valves shall be installed in accordance with Section 15095 “Valves, General.” Care shall be taken that all valves in are well supported on each end of the valve.

B. Installation of both manual and automatic air release valves shall be in accordance with the Standard Details.

C. All valves shall be installed in accordance with the Standard Details and manufacturer’s recommendations.

D. All air and vacuum release valves installed in pump stations shall have piped outlets to the nearest drain, firmly supported, and installed in such a way as to avoid splashing and wetting of floors.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This Contractor shall furnish all labor, material and equipment required to construct water service installations, as specified herein.

1.0.2. RELATED SECTIONS

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service
Section 15203 - Water Meter Valves

1.0.3. LEAD FREE REQUIREMENT

A. It is a requirement that all components of water service installations be certified lead free. All brass components for water service installations shall comply with the S3874 amendment (Reduction of Lead in Drinking Water Act) to Section 1417 of the Federal Safe Drinking Water Act.

B. All meters, meter accessories, copper pipe, brass pipe, fittings, corporation stops, saddles, washers, tailpieces, couplings and other appurtenant items used for water services shall be “NL” no lead Type for installation in the WASD system. Solders and flux shall contain no more than 0.2% lead.

C. All brass components shall be marked “NL” to indicate no lead.

D. All valves 2-inch and smaller shall conform to the No Lead, NL, requirement. Valves larger than 2-inches are exempt.

PART 2 – PRODUCTS

2.0.1. HDPE PIPE FOR SERVICES

A. All 2-inch high density polyethylene pipe used for services shall be IPS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 2.375-inches, minimum wall thickness of 0.264-inches, in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter". Pipe shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Pipe shall have a (natural) inner core with a blue colored outer shell. Pipe shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer

shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Pipe shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the pipe on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

B. All 1-inch high density polyethylene tubing used for services shall be CTS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 1.315-inches, minimum wall thickness of 0.125-inches, PE 3408, all in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Tubing". Tubing shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Tubing shall have a (natural) inner core with a blue colored outer shell. Tubing shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Tubing shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the tubing on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

C. All HDPE services require the use of a 10 gauge direct bury stranded copper blue tracer wire tapped every four feet with poly or duct tape for location purposes. The tracer wire shall be accessible at the meter box and connected to the corporation stop for continuity of the signal. The 10 AWG standard tracer wire shall have 0.030” HDPE insulation and measure 0.162” min O.D.

2.0.2. SERVICE TERMINAL FITTINGS

A. Single Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1” lock wing style valve, drilled for wire sealing, Cat. No. KV23-444W Ford Meter Box Co. or Cat. No. 14255, Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

B. Duel Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1" branch valve assembly, with Standard 7 ½ -in spacing between outlet centers, drilled for wire sealing, Cat. No. UV23-42W Ford Meter Box Co. or 1-in branch connection with Standard 7 ½ in spacing between outlet centers Cat. No. H-15362, fitted with angle stops for 5/8 inch meters, drilled for wire sealing, Cat. No. H-14265, (3/4' Inlet) Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

2.0.3. CASINGS FOR TORPEDO INSTALLATIONS

A. Provide a PVC Schedule 40 casing or black steel pipe casing one inch in diameter larger than the service pipe when the service is installed with the use of a torpedo. When the service is installed by the direct bury method, no casing is required.

2.0.4. BRASS FITTINGS AND VALVES

A. All brass components shall be marked "NL" to indicate no lead.

B. Angle Key Meter Valves – Ford Meter Box Company KV-444W, Mueller or approved equal.

C. Brass Fittings – Merrit Brass or approved equal

D. Pack Joint, Swivel Nut – A.Y. McDonald Model 4761-22

E. Ball Corporation Stop – Ford Meter Box Company FB800, Mueller H-10003 or approved equal.

PART 3 – EXECUTION

3.0.4. INSTALLATION OF SERVICES

A. Services from the new water mains shall consist of corporation stops, HDPE or copper tubing and terminal fittings as shown in the Standard Details. All service installations from the new main shall be installed by the Contractor. Service installations from existing mains, if required, will be installed by Department forces, and the cost for materials and labor furnished by the Department shall be borne by the Contractor.

B. Where possible, all meter boxes shall be installed in non-traffic and non-parking areas.

C. Where meter boxes are located in existing sidewalks, the whole flag of sidewalk shall be removed and replaced with new concrete. The concrete walk shall be 4 inches thick

and finished with the proper tools and techniques to resemble the existing walk. The concrete support for meter boxes shall be eliminated when the box is installed in an existing sidewalk. Where meter boxes are located out of sidewalk areas, a concrete support is required. Concrete supports shall be to the established line and grade.

D. Meter boxes shall be set flush with the finished grade if in sidewalks, or flush with the top of the ground if out of sidewalk areas. E. All bends in copper tubing shall be made with an approved type tube bender to the satisfaction of the Department. Flattened, out of round or kinked tubing will not be permitted.

E. One inch service connections shall be one of the following:

1. Short Single - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter, to the meter installation approximately 2 ½ feet from property line. Single meter box installation included.

2. 2. Long Single - Same as above but from a main on the opposite side of the street from the proposed meter.

3. Short Dual - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter to the meter installation, approximately 2 ½ feet from the property line and branched off to serve an additional customer. Dual meter box installation included.

4. Long Dual - Same as above but from a main on the opposite side of the street from the proposed.

F. If PVC or black steel casing pipe for services crossing existing pavement is required, the pipe may be driven from the side of the street which affords the most room for the driving trench, thus resulting in the least number of couplings in the casing. Extra care shall be used in leveling and heading the first length of casing in the proper direction. One method of driving casing, known to work in this area and offered here as a suggestion, is to use an ordinary coupling screwed on the leading end of the casing as a cutting edge, and driving against a coupling screwed on the tailing end with a special tool in a pneumatic hammer, while maintaining a steady pull forward on the hammer with a small winch. Each length of casing as driven shall be cleaned out with compressed air introduced through a one-half-inch pipe at least as long as the casing. The purpose of driving casing pipe is to make it unnecessary to repair paving over one-inch service cuts. Should the Contractor elect to open-trench any one-inch service line across pavement, he will be required to repair the paving.

G. The Contractor shall install the meter box, 1-inch branch assembly, 30 inch tailpieces and perforated spacers.

H. When installing services the Contractor shall temporarily plug the ends of the tail pieces for protection against dirt.

I. Pipe bedding and the backfill material to at least 6 inches above the crown of the copper tubing shall be clean white masonry sand. Backfilling and compaction of material lying above a point 6 inches above the crown of the tubing and below the surface of the ground shall be as specified in Section 02315, "Trenching and Backfilling for Piping Systems".

J. Department forces will install the meters into the boxes installed by the Contractor.

END OF SECTION

PART 1 – GENERAL

1.0.4. SCOPE OF WORK

A. The Contractor shall furnish and install all concrete meter boxes, lids, sectional plates and precast vaults required for a complete installation.

B. All concrete meter boxes, sectional plates and vaults shall be in accordance with the Department's Standard Details and as specified herein.

PART 2 – PRODUCTS

2.0.1. GENERAL

All materials used in the production of the concrete meter boxes, lids sectional plates and vaults shall be new and or recent manufacture. Aggregates shall not originate in salt or brackish water areas and no calcium chloride containing admixtures shall be used.

2.0.2. FINE AGGREGATE

Fine aggregate for concrete mixes shall consist of sand or stone screening, composed of hard durable grains, free of foreign matter such as loam, clay, dirt, organic matter or other impurities. Fine aggregate shall conform to the following gradation requirements:

Size Sieve	Percent Passing
3/8"	100
No. 4	90 to 100
No. 8	70 to 95
No. 16	50 to 85
No. 30	30 to 70
No. 50	10 to 45
No. 100	0 to 10

2.0.3. COARSE AGGREGATE

A. Coarse aggregate for concrete mixes shall consist of gravel, broken stone or local limerock.

B. Coarse aggregate shall be hard, durable and free of foreign matter such as loam, clay, dirt, organic matter or other impurities. It shall be free of adherent coatings. Coarse aggregate shall conform to the following gradation requirements:

1. Meter Boxes, Lids and Sectional Plates

Size Sieve	Percent Passing

3/4"	100
1/2"	90 to 100
3/8"	40 to 70
No. 4	0 to 15
No. 8	0 to 5

2. Vaults

Size Sieve	Percent Passing
1-1/2"	100
1"	95 to 100
1/2"	25 to 60
No. 4	0 to 10
No. 8	0 to 6

2.0.4. CEMENT

A. Cement shall be a standard brand of Portland cement meeting the requirements of ASTM C150-86, "Portland Cement", Type I.

B. Different brands of cement, even if tested and approved, shall not be mixed during use.

2.0.5. REINFORCING STEEL

A. General: All reinforcing steel shall be free of rust, grease, dirt or mortar and shall be thoroughly cleaned of any such foreign matter or loose mill scale before being placed in position.

B. Wire reinforcement shall conform to ASTM A82, "Steel Wire, Plain, for Concrete Reinforcement".

C. Wire mesh reinforcement shall conform to ASTM A185, "Steel Welded Wire, Fabric, Plain for Concrete Reinforcement".

D. Bar reinforcement shall conform to ASTM A615-7a, "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement", Grade 60, deformed, except that steel manufactured by the Bessemer process will not be accepted.

2.0.6. WATER

Water used in mixing concrete that is not in the form of surface moisture on the aggregate shall be from the Department's water supply or other approved source.

PART 3 – EXECUTION

3.0.2. MANUFACTURE

A. General

All concrete meter boxes, lids, sectional plates and vaults shall be manufactured in accordance with the applicable provisions of ASTM C858, "Underground Precast Concrete Utility Structures", as modified herein.

B. Forms

1. The Forms shall be made from of a non-porous material with smooth surfaces and shall be accurate and strong enough to maintain the structure's dimensions within one half of the allowable tolerances given in Section 3.4 of ASTM C858

2. The precast sections for 4' x 4' vaults shall be constructed with a threaded metal insert in accordance with Standard Detail No. WS 2.20, Sheet 1 of 2, contained herein. Also, each section shall be furnished with a corner bolt.

F. Cleaning and Oiling: Forms shall be cleaned before each use, and shall be free of paint or other protective coatings that might cling to the surface of the concrete. Releasing agents applied to the form to aid in breaking the bond shall not be injurious to the concrete.

G. Reinforcement: Steel reinforcing shall be securely positioned in the form to maintain the concrete cover shown on the Standard Details.

H. Mixture

1. The aggregates shall be sized, graded, proportioned and thoroughly mixed in a batch mixer with proportions of cement and water that will produce a homogeneous concrete having a compressive strength of 3500 psi at 28 days of age for the boxes and plates and 3000 psi for the vaults after the same curing period.

2. Batched concrete shall be made in standard concrete mixers only, and not in mortar boxes, wheelbarrows or similar equipment.

3. Mixers shall be standard mechanical (power-driven) rotary type for concrete. Mixers normally used for mortar or plaster mixing will not be permitted.

I. Concrete Placement

1. Concrete shall be placed either by gravity into the form at a rate such that the concrete is plastic at all times and flows readily into all parts of the form and around all reinforcement steel without segregation of materials, or by highspeed pneumatic rammer resulting in sense, evenly compacted concrete without disturbing the reinforcement. The surfaces from top to bottom shall show uniform compaction.

2. The top surface of the molded items shall be flat and finished smooth while in the mold. Capping will not be permitted. Where required by the Department, corners shall be rounded.

J. Curing: Curing shall be by any method or combination of methods that will develop the required compressive strength within 28 days or less.

K. Repairs: The precast units may not be repaired without specific approval by the Department. I. Inspection: The quality of materials, manufacturing process, and the finished units shall be subject to inspection at any time by the Department, and the supplier shall afford access for this purpose, if so required.

3.0.3. CERTIFICATION

Prior to installation of any of the above mentioned units, the Contractor shall furnished the Engineer, upon his required, with a statement giving the following information:

A. Name of manufacturer.

B. The source and type of cement.

C. The source and specific gravities of the aggregates.

D. The concrete mix proportions, and strength at 28 days.

E. Name of admixtures, if any.

F. Mill certificates for the reinforcement steel.

G. Source of water.

3.0.4. REJECTION

The Precast units shall be subject to reject, either at the manufacturing plant or at delivery, upon failure to conform to any of the specified requirements herein. The following imperfections shall also be cause for rejection:

A. Defects that indicate any imperfect concrete mixing and molding.

B. Surface defects such as honey-combed or open textured and damaged area which would affect the structural adequacy.

C. Repaired areas or capping.

D. Improper radius at corners or improper tolerances.

END OF SECTION

15203 WATER METER VALVES

PART 1 – GENERAL

1.0.6. SCOPE OF WORK

This Contractor shall furnish meter valve and accessories for cold water displacement meters (to be furnished and installed by the Department) and shall supply all labor, material and equipment necessary for a satisfactory installation.

1.0.7. RELATED SECTION

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service

PART 2 – PRODUCTS

2.0.1. METER VALVE ASSEMBLY

A. Meter valves (inlet side of meter) for single meter box installations, including single meter boxes for multi-story buildings, shall be the lock wing type with coupling nut drilled for wire seal. The inlet end of the valve shall be for 1-inch copper tubing as specified herein, and the outlet end (coupling nut) shall connect to a 1-inch meter. The valves shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Angle Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Angle Meter Stop, No. H-14255

B. Meter valves (outlet side of meter) for single meter boxes (multi-story building) shall be the plain type with coupling nut drilled for wire seal. The inlet end of the valves (coupling nut) shall be for 1-inch copper tubing as specified herein, and the outlet end shall connect to a 1-inch meter. The valves shall be as manufactured by the following or approved equal:

Ford Meter Box. - Straight Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Straight Inverted Key Meter Valves, No. H-14348

C. Meter branch valve assemblies (inlet side of meter) with standard 7-1/2 inch spacing for dual meter boxes (two 5/8-inch water meters) shall be lock-wing types with coupling nuts drilled for wire seal. The inlet side of the branch valve assembly shall be for 1-inch copper tubing as specified herein, and the outlet side (coupling nut) shall connect to a 5/8-inch by 3/4-inch meter. The branch valve assembly shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Branch Valve Assemblies, No. UV23-42WW

or
Mueller Co. - "U" branch connection No. H-15362 with 7-1/2 inch spacing, 3/4 I.P. male thread (outlet) and inlet for 1-inch copper tubing
and
Mueller Co. – Angle meter stops No. H-14265 with 3/4-inch I.P. female thread (inlet), and coupling nut (outlet) for 5/8-inch by 3/4- inch meter and drilled for wire seal.

END OF SECTION

15330 FIRE HYDRANTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install approved fire hydrants and accessories in accordance with the requirements of this Section.

B. Where a new larger main or mains are installed as a part of the work, existing fire hydrants fed by smaller mains shall be connected to the larger main to provide maximum fire flow capability. Such re-connection shall automatically be designed by the Engineer of Record and become part of the plans and project work unless otherwise permitted by the City in writing.

1.0.2. QUALITY ASSURANCE

A. Codes: Fire hydrants shall conform with the requirements of ANSI/AWWA Standard C502, "Dry Barrel Fire Hydrants" (latest edition), as modified herein; the Miami-Dade County Fire Flow Ordinance and the Miami-Dade County Fire Department. Hydrants installed within the limits of the City of Miami shall conform to that fire department's standards.

B. Manufacturer: The hydrants shall be the standard product of a manufacturing firm which has been engaged in the production of fire hydrants for a period of at least five years.

1.0.3. INFORMATION TO BE FURNISHED BY BIDDER

A. The Contractor shall furnish four (4) sets of shop drawings for approval showing all the essential features including arrangement and descriptions of parts of the equipment offered.

PART 2 – PRODUCTS

2.0.1. APPROVED HYDRANTS

The fire hydrants shall be one (1) of the following models approved by the Miami-Dade County Fire Department:

	Model	Manufacturer
1.	A 423 Centurion	Mueller Company
2.	K81-MD (per Kennedy Drawing No. 80783 MD, Rev. 05)	Kennedy Valve
3.	Medallion #F2545	Clow Valve
4.	5-¼" B-84-B	American-Darling Co.

2.0.2. HYDRANT CHARACTERISTICS

The hydrants shall have the following features:

A. All hydrants shall meet the flow requirements of Section 2-103.21(B), Metropolitan Dade County Code. A certification for compliance with this standard must be available if requested.

B. Type of shutoff shall be compression type closing, with the line pressure, and a minimum 5- 1/4-inch valve opening.

C. Barrels - Upper barrel with breakaway-from-lower-barrel feature shall be designed with a breakable safety connection of the flange and collar bolt-connected type joining the two barrels together. Lower barrel shall be of the same material as the hydrant shoe (inlet connection), and shall be designed so that the barrel can be removed from the hydrant shoe when the shoe (and valve) are under pressure. The drain outlets normally provided shall be omitted.

D. Main valve stem - Upper stem shall have breakaway-from-lower-stem feature. Top of the lower stem shall be below the top of the lower barrel to prevent a vehicle tire from depressing the stem and opening the valve, or damaging both lower stem and lower barrel. Stem and seat removal shall be easily accomplished from the upper part of the lower barrel or the upper barrel.

E. Main valve seat ring shall be bronze threaded into a fixed bronze bushing and shall be equipped with upper and lower O-ring seals, the lower of which shall seal against the hydrant elbow.

F. Sealed lubricant reservoir shall provide lubrication to all threaded and bearing surfaces automatically, and shall be located in the bonnet. All hydrants shall be supplied with factory pre-lubrication.

G. Inlet connection - Side inlet, 6-inch mechanical joint.

H. Delivery classification - Two (2) hose and one (1) pump nozzle 18 inches above ground (bury line).

I. Hose and pumper nozzles - Threaded, with O-ring seal, and the nozzle retained by stainless steel screws, or a left hand thread lug, slot and pipe plug lock system.

Hose nozzle diameter shall be 2-1/2 inches, and threads shall be in accordance with American National Standard.

Pumper nozzle (City of Miami Standard) shall be 4-inch inside diameter, 4 and 47/64-inch outside diameter of threads, 7 threads per inch, 0.143-inch pitch, right hand, V-form threads.

Pumper nozzle (Dade County Standard) shall have 4 and ½-inch diameter threads conforming to American National Standard.

J. Bury length shall be as shown on the Plans or specified elsewhere herein.

K. Operating and cap nuts (City of Miami Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/8 inch point to flat, with operating nut weather cap.

Operating and cap nuts (Dade County Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/2 inch point to flat, with operating nut weather cap.

L. Stuffing box - O-ring pressure seal.

M. Direction to open shall be counterclockwise.

N. Markings - Hydrants shall be cast marked or outside design shall be such that visible identification can be made as to manufacturer model (type). In addition, all hydrants approved as a "special" or "modified" hydrant shall be cast marked "Dade County, Florida".

O. Color shall be chrome yellow.

P. Harnessing lugs and nozzle cap gaskets will not be required.

Q. Nozzle cap chains will not be required on the "Dade County Standard" hydrants; however, they will be required on the "City of Miami Standard" hydrants.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. Six-inch branch runs to the fire hydrant shall be constructed in accordance with all applicable portions of Section 15060 "Piping and Fittings", including making thrust resistant joints, installing 6-inch gate valve, tie-rods, riser pipe and valve boxes. Where the distance of any branch run from the main shall be fifty feet or greater, it shall be constructed with 8-inch diameter piping.

B. New fire hydrants and branch runs shall be installed by the Contractor where shown on the Plans and in accordance with the Standard Details herein. Installation of a new fire hydrant shall include excavation, installation of the branch run, installation of the hydrant on the branch run, the concrete anchor at the hydrant elbow, protective concrete slab in nonsidewalk areas, replacing concrete sidewalk when in sidewalk area; steel posts filled with concrete, where required; plastic warning posts where required in FDOT right of way; backfilling and compaction. Fire hydrants shall be touched up or repainted with yellow paint, as specified, where necessary, and the same type of paint shall be used to paint the guard posts after treating the galvanized surface with a neutralizer.

C. Some fire hydrants are factory lubricated, while others require lubrication after installation. The Contractor shall verify which type of hydrant has been furnished hereunder with the Engineer, and if required, shall lubricate each hydrant after its installation and prior to its operation.

D. Lubricating hydrants will be considered as incidental to the hydrant installation, and no

extra compensation will be provided for this work. Where existing fire hydrants are removed they shall be cleaned and returned to the City of Opa-Locka Public Works Department storage yard(s), as directed by the City.

E. Fire hydrants being retired shall be salvaged by excavating the entire hydrant assembly including the bottom shoe. Using caution so as not to damage any component of the hydrant assembly, remove the entire hydrant assembly including the shoe, carefully clean of any thrust block concrete, clean, load, transport, unload and store in a Department storage yard as directed by the Engineer. Fire hydrant feed mains shall be cut, plugged and thrust blocked if they are to remain connected to an active main line. Lines which are deactivated (ie not connected to an active main) shall be abandoned or removed as called for on the Plans.

F. Unless otherwise objected by the local municipality or governing agency having jurisdiction over the work, the Contractor shall furnish and install concrete-filled steel guard post in accordance with the Standard Details.

END OF SECTION

15995 DISINFECTION OF WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish the necessary labor, equipment, and material to flush, clean and disinfect sections of water main and fittings as applicable to this project.

1.0.2. RELATED SECTION

A. Section 02505 “Cleaning and Testing of Main”.

1.0.3. QUALITY ASSURANCE

A. All water main pipelines shall be disinfected after they have been pressure tested and while still full of water, as specified in AWWA standard C651 latest revision and Miami-Dade County Health Department procedures.

PART 2 – PRODUCTS

2.0.1. Liquid Chlorine, available from local sources.

2.0.2. Calcium hypochlorite, HTH, Perchloron, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall clean, flush and disinfect every piece of pipe, fitting and valve in accordance with these specifications and to the satisfaction of the City.

B. Liquid chlorine is available locally and shall be purchased by the Contractor.

3.0.2. DISINFECTION

A. The pipelines shall be disinfected after they have been pressure tested and while still full of water.

B. A suitable chlorinator shall be used to inject chlorine into the lines. All connections required for the introduction of chlorine into the water lines shall be made by the Contractor. Chlorine and water shall be introduced at one end and shall be allowed to flow slowly through the lines to the other end where it shall be removed and disposed of at the Contractor’s expenses. Several points of introduction and removal of chlorine solution may have to be employed to get an even distribution through the entire section being disinfected.

C. The quantity of chlorine introduced shall be such as to ensure a concentration of at least 50 parts per million in the water flowing from the line.

D. The chlorine solution shall be allowed to stand in the line for at least 24 hours or longer, if required, to destroy all harmful bacteria. At the end of the required time, the concentration of chlorine in all parts of the section shall be at least 25 ppm.

E. All valves and appurtenances in the section shall be operated at least once during the above period. After the required period, the treated water shall be thoroughly flushed from the section and the system filled with potable water.

F. The Contractor shall be responsible for coordination with Miami-Dade County Department of Health, who shall collect and test samples from main. The Contractor shall provide assistance to the Dept. of Health for the collection of samples. The samples shall be taken from each main or section of main to be placed in service where designated by the Dept. of Health. The samples must be approved by the Department of Health before the main is placed in service.

G. The Contractor shall be responsible for any rechlorination, retesting and fees that may be required until the Department of Health's approval is obtained. The Contractor shall be responsible for the disposal of all water flushed from the system and shall safeguard all adjoining properties from damage from flooding. The Contractor shall exercise due care in the protection of private property from water damage due to his operations. In addition, the Contractor shall assume complete liability for any damage which was directly or in-directly caused by his operations.

H. All of the connections shall be disinfected by the Contractor.

I. The inside of each pipe and fitting laid by the Contractor in connecting to existing mains which are isolated from the main by valves shall be swabbed with calcium hypochlorite, HTH, Perchloron, or approved equal, mixed in solution with water. The quantity of hypochlorite shall in all cases be subject to the approval of the City of Opa-Locka Public Works Department, whose representative shall be present at all times while this phase of the work is in progress.

J. Wherever practicable, water from the existing mains flowing through the disinfected connections shall be used in disinfecting the main line in order that the hypochlorite may be removed to the greatest extent possible. In other cases, the water from the disinfected connections shall be removed by allowing it to flow into the main line as it is being drained.

K. No pipe shall be placed in service until it has been disinfected as approved by the Engineering Division City of Opa-Locka and certified by the Department of Health including certified as-built drawings accepted by the City.

END OF SECTION

END OF TECHNICAL SPECIFICATIONS

PART III
PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this ITB.

3-2 MINIMUM SUBMISSION REQUIREMENTS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents
Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal

3.2.3.1 Limit to one or two pages.

3.2.3.2 Briefly state the Proposer's understanding of the work to be done and make a positive commitment to perform the work.

3.2.3.3 Give the names of the persons who will be authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3.2.3.4 Provide an official signature of a Corporate Officer certifying the contents of the Proposer's responses to the City's Request for Proposal.

3.2.4 Tab 3 - General Information

3.2.4.1 Name of Business.

3.2.4.2 Mailing Address and Phone Number.

3.2.4.3 Names and contact information of persons to be contacted for information or services if different from name of person in charge.

3.2.4.4 Normal business hours.

3.2.4.5 State if business is local, national, or international and indicate the business legal status (corporation, partnership, etc.).

3.2.4.6 Give the date business was organized and/or incorporated, and where.

3.2.4.7 Give the location of the office from which the work is to be done and the number of professional staff employees at that office.

3.2.4.8 Indicate whether the business is a parent or subsidiary in a group of firms/ agencies. If it is, please state the name of the parent company.

3.2.4.9 State if the business is licensed, permitted and/or certified to do business in the State of Florida and attach copies of all such licenses issued to the business entity.

3.2.5 Tab 4 – Project Approach

Describe in detail the proposal to fulfill the requirements of the scope of services listed in Part II of this ITB.

3.2.6 Tab 5 – Experience and Qualifications

3.2.6.1 Specify the number of years the Proposer has been in business.

3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this ITB as listed in section 2-2 of the Scope of Services.

3.2.7 Tab 6 – Schedule

3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Program.

3.2.7.2 Indicate the earliest available start date for Proposer's project team.

3.2.7.3 Indicate the project completion date based on the date provided in 3.2.7.1.

3.2.8 Tab 7 – Pricing of Services

3.2.8.1 The fee basis should be based on the Pricing Proposal (Page 12).

3.2.9 Tab 8 – References

3.2.9.1 List a minimum of three (3) references in Florida for which the Proposer has provided Vulnerability Assessment, Adaptions and Resiliency Plan Services. Include the name of the organization, brief description of the project, name of contact person telephone number and email address.

3.2.10 Tab 9 – Additional Forms

Proposers must complete and submit as part of its Proposal all the following forms and/or documents.

- Proposer Qualifications
- Certification regarding debarment and suspension
- Drug Free workplace certification
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verification

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY THE PROPOSER.

PART IV
EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee, consisting of City personnel, will convene, review, and discuss all proposals submitted. The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the ITB, including a detailed explanation of how the services shall be performed.

Each proposal will be reviewed to determine if the Proposal is responsive to the submission requirements outlined in the Solicitation. A responsive Proposal is one which follows the requirements of this Solicitation that includes all documents submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. The Contract (s) will be awarded to the most responsive Proposer whose Proposal best serves the interest of and represents the best value to the City of Opa-locka.

4-2 EVALUATION CRITERIA

The Committee may select and choose to invite any and/or or all firms to make presentations and be interviewed by the Committee as part of the evaluation process for this Solicitation. The Committee's decision will be communicated by staff to all Proposers. The Proposer's presentation may clarify but may not modify their submitted Proposal. Any discussion between the presenter and Evaluation Committee during presentations is intended only for purposes of providing clarification in response to questions from the Committee.

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee to clarify their proposals. Only those firms with the highest rated scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted, without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentation evaluation phase. References and site visits (if completed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this ITB, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated Agreement. The City's decisions will be final. Following the selection of firm, the expectation is that an Agreement will be executed between both parties. City staff will recommend the award to the responsible Proposer whose Proposal is determined to provide overall best value to the City, considering the evaluation factors in this ITB.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

The Proposer, MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. **Name and Title of Principal Officers** **Date Elected:**

   _____ _____

   _____ _____

   _____ _____

   _____ _____

6. The length of time in business:_____years

7. The length of time (continuous) in business as a service organization in Florida:
   _____years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka ITB during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by_____
(Name)

the _____ of_____
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

_____ _____
Date Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20____

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large My

commission expires:

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

Junior Bergel

From: Juan Contin <management@basileusa.com>
Sent: Friday, November 15, 2024 12:02 PM
To: Junior Bergel
Cc: Luigi B; Luigi Basile; Karina Alvarez
Subject: Confirmation of Performance Bond Inclusion

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Jay,

This email confirms that the bid submitted to the City of Opa-Locka by Basile USA, LLC. includes the required performance bond.

If you require any additional information or documentation, please don't hesitate to reach out.

Thank you,

Juan Contin
Ph: 954 3004200
BASILE USA LLC
www.basileusa.com

BASILE USA, LLC.
License: CGC157617

ITB #24-1114200

Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project

City of Opa-Locka

Bidder:

BASILE USA LLC
3864 SW 30th Avenue,
Fort Lauderdale, FL, 33312
Ph. 954.300.4200
info@basileusa.com

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THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

TO THE COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA

Ladies and Gentlemen:

The undersigned bidder proposes to furnish all labor, tools, material and supplies, and to sustain all the expense incurred in doing the work set forth below that may be awarded the undersigned by the City of Opa-Locka, Florida, through its proper officers, and to do the same strictly in accordance with the plans and contract documents on file in the Office of the City Engineer of Opa-Locka, which are referred to below and made a part hereof, at the following combination of lump sum prices:

Item No.	Estimated Quantity	Description	Total
1.	Lump Sum (Divided into 2 or 4 payments See Measurement and Payment for Conditions)	For performing preparatory work and operations in mobilizing for beginning the work of the Project, but excluding materials and permit costs, both of which are paid under other payments items, the lump sum of Four hundred eighty one thousand eight hundred Dollars and thrirty two Cents	$ 481,800.32
Water System Improvements			
2.	6 each	For furnishing and constructing Fire Hydrant Assemblies (FHs) for water main, per Standard Detail WS 4.50, at the locations shown on the Plans, complete, the price each of Twelve thousand two hundred sixty three Dollars and Nintey five Cents	$ 73,583.69

Item No.	Estimated Quantity	Description	Total
3.	2 each	For demolishing damaged fire hydrant assemblies, the price per each of One thousand nine hundred twenty nive Dollars and Forty Cents	$ 3,858.79
4.	38 each	For adjusting rim elevation of existing water meters to meet proposed grade and replace lid, as show on the Plans, the price each of, One thousand five hundred twenty one Dollars and Thirty two Cents	$ 57,810.05
5.	8 each	For adjusting rim elevation of existing water valves to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, Six hundred fifty five Dollars and twenty six Cents	$ 5,242.07
6.	6 each	For adjusting rim elevation of existing water ARV's to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, Eight hundred eighty four Dollars and thirty five Cents	$ 5,306.11
Sewer System Improvements			

Item No.	Estimated Quantity	Description	Total
7.	150 LF	For selling and delivering to the City 3" HDPE pipe and fittings for sewer force main, the price per lineal foot of Forty five Dollars and Sixty nine Cents	$ 6,852.95
8.	150 LF	For installing 3" HDPE pipe and fittings for sewer force main along Cairo Lane and across NW 135th Street, the price per lineal foot of Sixty- three Dollars and Twenty eight Cents	$ 9,491.28
9.	Lump Sum	For selling and delivering to the City all valves necessary and tapping sleeve for the hot tapping of the existing 16" CIP FM at 135th street, as shown on the Plans, complete, the lump sum of Seven thousand five hundred nine Dollars and Seventy nine Cents	$ 7,509.79
10.	Lump Sum	For hot tapping the existing 16-inch cast iron force main at: NW 135th Street (STA 43+88±) including installing all valves and tapping sleeve necessary for connection, and, as shown on the Plans, complete, the lump sum of Fifteen thousand eight hundred eighty -one Dollars and Twenty eight Cents.	$ 15,881.28

Item No.	Estimated Quantity	Description	Total
11.	670 LF	For selling and delivering to the City 2" HDPE pipe and fittings for sewer force service connections, the price per lineal foot of Fifteen Dollars and Eight Cents	$ 10,104.01
12.	670 LF	For installing City 2" HDPE pipe and fittings for sewer service connections along Cairo Lane, the price per lineal foot of Twenty eight Dollars and thirty three Cents	$ 18,982.56
13.	18 each	For selling and delivering to the City 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections, complete, the price each of One thousand five hundred twelve Dollars and Sixty five Cents.	$ 27,227.65
14.	18 each	For installing 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections along Cairo Lane, complete, the price each of Seven hundred three Dollars and Six Cents.	$ 12,655.04
15.	18 each	For selling and delivering to the City 2-inch HDPE Plugs for sewer force main service connections, complete, the price each of Four hundred thirty nine Dollars and Forty three Cents.	$ 7,909.69

Item No.	Estimated Quantity	Description	Total
16.	18 each	For installing 2-inch HDPE Plugs for sewer force main service connections along Cairo Lane, complete, the price each of Three hundred fifty one Dollars and Fifty three Cents.	$ 6,327.52
17.	1 each	For selling and delivering to the City 2-inch ball valves with valve boxes for sewer force main, complete, the price each of One thousand one hundred seventy -one Dollars and cero Cents.	$ 1,171.00
18.	1 each	For installing 2-inch ball valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of Onet thousand five hundred eighty one Dollars and Eighty eight Cents.	$ 1,581.88
19.	1 each	For selling and delivering to the City 2-inch flushing valve outlets with valve boxes for sewer force main, complete, the price each of One thousand one hundred seventy -one Dollars and Cero Cents.	$ 1,171.00
20.	1 each	For installing 2-inch flushing valve outlets with valve boxes for sewer force main along Cairo Lane, complete, the price each of One thousand five hundred eighty one Dollars and Eighty eight Cents.	$ 1,581.88

Item No.	Estimated Quantity	Description	Total
21.	1 each	For furnishing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of Eight thousand four hundred seventy-seven Dollars and Nineteen Cents	$ 8,477.19
22.	1 each	For constructing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of One thousand five hundred eighty one Dollars and Eighty eight Cents	$ 1,581.88
23.	1 each	For selling and delivering to the City 2-inch mechanical joint plug valves with valve boxes for sewer force main, complete, the price each of One thousand one hundred seventy -one Dollars and Cero Cents.	$ 1,171.00
24.	1 each	For installing 2-inch mechanical joint plug valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of One thousand five hundred eighty one Dollars and Eighty eight Cents.	$ 1,581.88
25.	2 each	For adjusting rim elevation of existing sewer valves to meet proposed grade, and replace cover, along Cairo Lane, as show on the Plans, the price each of, One thousand five hundred eighty one Dollars and Eighty eight Cents	$ 3,163.76

Item No.	Estimated Quantity	Description	Total
26.	3 each	For adjusting rim elevation of existing sewer ARV's to meet proposed grade and replace cover, as show on the Plans, the price each of, Four thousand four hundred seventeen Dollars and Twenty-seven Cents	$ 13,251.80
Drainage System Improvements			
27.	1595 LF	For selling and delivering to the City 24" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of $61,80 Sixty one dollars and eighty cents	$ 98,578.67
28.	1595 LF	For installing City 24" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of Seventy nine Dollars and Seventy two Cents	$ 127,158.40
29.	395 LF	For selling and delivering to the City 18" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of $37.79 Thirty seven dollars and seventy nine cents	$ 14,926.59
30.	395 LF	For installing City 18" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of Seventy two Dollars and Thirty two Cents	$ 28,564.90

Item No.	Estimated Quantity	Description	Total
31.	105 LF	For selling and delivering to the City 15" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of Thirty four Dollars and Thirty six Cents	$ 3,608.27
32.	105 LF	For installing City 15" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane, the price per lineal foot of Seventy six Dollars and Fifty one Cents	$ 8,033.73
33.	Lump Sum	For furnishing and installing two (2) StormSafe Vaults model SSV40-2-000 by FABCO for the stormwater treatment system at Cairo Lane, the lump sum price of Four hundred eighty -seven thousand, two hundred fifty - nine Dollars and Twenty three Cents	$ 487,259.23
34.	33 EA	For furnishing and installing StormSack Plus model PSS1626-1E-000 by FABCO for the stormwater treatment system at Cairo Lane, the unit price of Four thousand five hundred sixty-one Dollars and Sixty-one Cents	$ 150,533.06
35.	Lump Sum	For demolishing and disposing existing NSBB Model #NSBB-8-14 drainage treatment structure, the lump sum price of Fifteen thousand eight hundred eighteen Dollars and Eighty Cents	$ 15,818.80

Item No.	Estimated Quantity	Description	Total
36.	12 each	For selling and delivering to the City precast stormwater structures along Cairo Lane and NW 127th Street, including rims and covers, for the installation of drainage system, the unit price of Three thousand eight hundred forty- one Dollars and Seventy seven Cents	$ 46,101.25
37.	12 each	For installing precast stormwater structures, including rims and covers along Cairo Lane and NW 127th Street, for the installation of drainage system, the unit price of Three thousand one hundred sixty three Dollars and Seventy six Cents	$ 37,965.12
38.	3 each	For repairing damaged stormwater catch basins structures S-2 and S-3 along Cairo Lane and S-27 along NW 127th Street, the unit price of Three thousand nine hundred sixty nine Dollars and Sixty one Cents	$ 11,908.83
39.	28 each	For adjusting rim elevation of existing stormwater catch basins to meet proposed grade and replace cover, as show on the Plans, the price each of, One thousand seven hundred-eight Dollars and Fifty Cents	$ 47,837.91
40.	6 CY	For furnishing and installing precast reinforced concrete headwalls for stormwater outfall, per FDOT index No. 430-030, as indicated in the Plans, the price per cubic yard of $1,727.43 One thousand seven hundred twenty seven dollars and forty three cents	$ 10,364.57

Item No.	Estimated Quantity	Description	Total
41.	115 TON	For furnishing and installing Rubble (Broken Stone) at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of Two hundred seventy nine Dollars and Thirty four Cents.	$ 32,124.59
42.	5 CY	For furnishing and installing sand-cement bags at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ~~ton~~ of cubic yard of Seven thousand three hundred fifteen Dollars and Thirteen Cents.	$ 36,575.65

Item No.	Estimated Quantity	Description	Total
43.	1 EA	For furnishing and installing manatee grate for 36" pipe for stormwater outfall, as indicated in the Plans, the unit price of Thirteen thousand three hundred seventy two Dollars and thirty three Cents	$13,372.33
44.	1 EA	For furnishing and installing 36-inch in-line check valves with valve boxes for stormwater outfall, as indicated in Plans, the unit price of Forty six thousand five hundred ninety one Dollars and sixty two Cents	$46,591.62

Item No.	Estimated Quantity	Description	Total
45.	Lump Sum (Dedicated Allowance)	For dewatering, transporting to, and safe disposal of, potentially contaminated groundwater, as required for underground pipe installation, the lump sum price of three hundred thousand Dollars and cero Cents	$ 300,000
Roadway Reconstruction			
46.	740 CY	For the excavating of existing backfill material along Cairo Lane and NW 127th Street, for the grading for roadway improvements, the price per cubic yard of Fifty three Dollars and Five Cents.	$ 39,259.05

Item No.	Estimated Quantity	Description	Total
47.	765 CY	For furnishing and placing suitable Backfill required for the grading for roadway reconstruction along Cairo Lane, NW 127th Street, the price per cubic yard of Forty Dollars and seventy four Cents.	$ 31,165.91
48.	7550 SY	For milling (nominal 2 inch thick), surface course for permanent paving repairs along Cairo Lane, the price per square yard of Two Dollars and Ninety four Cents.	$ 22,169.12
49.	1300 SY	For selling and delivering to the City Concrete for the installation of 8-inch thick Concrete Pavement per FDOT index No. 350, the price square yard of One hundred- nine Dollars and Ninety seven Cents.	$ 830,270.12
50.	1300 CY	For constructing 8-inch thick Concrete Pavement per FDOT index No. 350, as indicated in the Plans, the price per price square yard of Twenty five Dollars and Forty Cents.	$ 33,021.83

Item No.	Estimated Quantity	Description	Total
51.	12150 SY	For furnishing and constructing asphalt base, B-12.5, min. 3.5-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of Forty one Dollars and seventy one Cents	$ 506,781.22
52.	12150 SY	For furnishing and constructing superpave asphaltic concrete, SP-12.5, PG-76-22 min. 2-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of Twenty four Dollars and Six Cents	$ 292,301.06
53.	12150 SY	For furnishing and constructing friction course, FC-12.5, PG-76-21, min. 1-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of Twelve Dollars and Three Cents	$ 146,150.53
54.	1830 SY	For milling (nominal 1 inch thick), surface course for permanent paving repairs along NW 32nd Ave, the price per square yard of Five Dollars and Eighty one Cents.	$ 10,626.41

Item No.	Estimated Quantity	Description	Total
55.	1830 SY	For constructing for Type "V" permanent paving repairs (minimum 1 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of Eleven Dollars and fifty one Cents.	$ 21,071.89
56.	500 SY	For constructing for Type "V" permanent paving installation (minimum 2 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of Twenty five Dollars and eighty Cents.	$ 12,899.10
57.	600 SY	For milling (nominal 1.5 inch thick), surface course for permanent paving repairs along NW 135th Street, the price per square yard of Nineteen Dollars and eighty six Cents.	$ 11,914.42
58.	600 SY	For constructing for Type "V" permanent paving repairs along NW 135th Street Ave (Min 1.5-inch overlay), as per details provided in plans, the price per square yard of Nineteen Dollars and eighty six Cents.	$ 11,914.42

Item No.	Estimated Quantity	Description	Total
59.	740 SF	For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, the price per square foot of Ten Dollars and forty two Cents.	$ 7,708.90
60.	1635 SF	For furnishing and constructing 6-inch concrete driveway approach to match existing, the price per square foot of Twelve Dollars and forty six Cents.	$ 20,373.98
61.	360 LF	For furnishing and constructing concrete curb and gutter restoration to match existing along the intersection between NW 127th Street and NW 32nd Avenue, the price per linear foot of Forty Dollars and one Cents.	$ 14,401.80
62.	8995 LF	For furnishing and constructing concrete valley gutter along Cairo Lane and NW 127th Street, the price per linear foot of Thrity five Dollars and seventy four Cents.	$ 321,462.40
63.	30 LF	For furnishing and installing general guardrail at the outfall along Cairo Lane, the price per linear foot of Four hundred ninety seven Dollars and cero Cents.	$ 14,910.00

Item No.	Estimated Quantity	Description	Total
64.	Lump Sum	For furnishing and installing pavement markings, including signage and raised pavement markers, as indicated in plans, the lump sum price of Seventeen thousand four hundred seventy nine Dollars and seventy seven Cents.	$ 17,479.77
65.	Lump Sum	For demolishing and disposing existing median curb at the intersection between NW 127th Street and NW 32nd Ave, as indicated in plans, the price per lump sum of Two thousand six Dollars and sixty Cents.	$ 2,006.60
66.	14 EA	For removing and disposing existing trees located at the median curb at the intersection between NW 127th Street and NW 32nd Ave, the unit price of Three thousand three hundred forty one Dollars and twenty six Cents.	$ 46,777.64
67.	Lump Sum	For providing full Traffic Control during construction along Cairo Lane, Alexandria Drive and NW 127th Street Maintenance of Traffic, the lump sum price of Thirty three thousand thirty-six Dollars and sixty six Cents.	$ 33,036.66
Dedicated Allowances			
68.	7 each (Dedicated Allowance)	For repairing damaged fire hydrants assemblies, per Standard Detail WS 4.50, the price per each of Three thousand five hundred Dollars and cero Cents	$ 24,500

Item No.	Estimated Quantity	Description	Total
69.	7 each (Dedicated Allowance)	For demolishing and replacing damaged fire hydrant assemblies, per Standard Detail WS 4.50, the price per each of $6,750 Dollars and 0 Cents	$ 47,250
70.	7 each (Dedicated Allowance)	For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, the price per each of $1,100 Dollars and 0 Cents	$ 7,700
71.	38 each (Dedicated Allowance)	For repairing damaged water meters, including boxes, along Cairo Lane and NW 127th Street as per Standard Details shown in Plans, the price each of, $1,000 Dollars and 0 Cents	$ 38,000
72.	10 each (Dedicated Allowance)	For repairing damaged stormwater catch basins structures, the unit price of $5,500 Dollars and 0 Cents	$ 55,000
73.	5300 SF (Dedicated Allowance)	For sheeting and shoring ordered left in place by the Engineer for sewer and drainage improvements, the price per square foot of $20 Dollars and 0 Cents.	$ 106,000

Item No.	Estimated Quantity	Description	Total
74.	1500 CY (Dedicated Allowance)	For removal, transport and legal disposal of above-ground debris, including tipping fees, the price per cubic yard of $185 Dollars and 0 Cents.	$ 277,500
75.	2000 SY (Dedicated Allowance)	For restoring sodded area (harmonization), the price per square yard of $19 Dollars and 0 Cents.	$ 38,000
76.	**Sub-Total – Bid Items 1 through 75**	$ 5,344,252.41	
77.	Dedicated Allowance	For providing uniformed, off-duty policemen for the purpose of maintenance of traffic, the aggregate sum of Five hundred Dollars and cero Cents.	$ 500.00
78.	Dedicated Allowance	For all cost of required permit fees including Soil Management Plan and Health & Safety Plan, impact fees, if required by the Engineer, the sum of 5% of the Subtotal, Item 76 (0.05) x (Subtotal, Item 76) Two hundred sixty seven thousand two hundred twelve Dollars and sixty two Cents.	$ 267,212.62

Item No.	Estimated Quantity	Description	Total
79.	Contingency Allowance	For unforeseen conditions, for minor construction changes and for quantity adjustments, if ordered by the Engineer, the sum of 10% of the Subtotal, Item 76 (.10) x (Subtotal, Item 76) Five hundred thirty four thousand, four hundred twenty five Dollars and twenty four Cents.	$534,425.24
80.	Contingency Allowance	For unforeseen plan revisions due to ongoing permitting efforts if required by permitting approvals, only to be used if required and approved by the City, the sum of 5% of the Subtotal, Item 76 (.05) x (Subtotal, Item 76) Two hundred sixty seven thousand two hundred twelve Dollars and sixty two Cents.	$267,212.62
81.	**TOTAL BID – (Sum of Bid Item Nos. 76, 77, 78, 79, and 80,)**	$1,069,350.48	

Note: For a detailed description of each Quotation Item, refer to Section 01025 of the Specifications entitled "Measurement and Payment.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

The City of Opa-Locka reserves the right to waive any informality in any bid and to reject any or all bids.

TOTAL BASE BID PRICE FOR PROPOSAL (ITEMS 1 THROUGH 81): $ 6,413,602.89
(FIGURES)

Six million, four hundred thirteen thousand, six hundred two Dollars and

eighty-nine Cents

AMOUNTS SHALL BE SHOWN ON BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BASE BID.

Bidder acknowledges that included in the various items of the bid proposal and in the TOTAL BASE BID PRICE are costs for complying with the Florida Trench Safety Act, F.S. 553.60 et. seq. The Bidder by signing and submitting the Trench Safety Act Compliance Statement is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards.

Contract award shall be based upon the total base bid price, as identified above, by the lowest responsive, responsible bidder.

BASILE USA LLC
FIRM NAME (PRINT)

BIDDER'S SIGNATURE

BASILE USA, LLC.
License: CGC157617

Letter of Transmittal

We are pleased to submit this letter in response to your request for services for the ITB No. 24-1114200 Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project. We have reviewed your requirements thoroughly and are confident in our understanding of the project's objectives and scope. With our experience in Miami Dade and Broward, we possess both the expertise and resources necessary to ensure the successful completion of your project.

At Basile USA, we are committed to delivering high-quality results that meet and exceed your expectations. Our team includes skilled professionals with proven experience in similar projects, and we have established systems in place to manage each phase effectively. We are fully prepared to allocate all required resources to achieve your goals and ensure that the project is completed on time and within budget.

The following individual is authorized to make representations on behalf of BASILE USA for this project:

Luigi Basile, President, Ph. 305.491.2100

Please do not hesitate to reach out if you have any questions or need further details.

Sincerely,

Luigi Basile
BASILE USA LLC

3864 SW 30TH Avenue, Ft. Lauderdale, FL. 33312
Phone: (954) 300-4200
Email: info@basileusa.com
www.basileusa.com

General Information

Name of Business: BASILE USA LLC

Mailing Address: 8264 SW 30th Avenue, Fort Lauderdale, FL,33132

Phone Number: 954.300.4200

License Number: CGC 1517617 (Attached)

Names and contact information:

Juan Contin / Manager / 954.300.4200

Susana Chavez / Accounting Dept. / 954.300.4200

Diosdado Diaz / Project Manager / 954.300.4200

Normal business hours: Monday to Friday 8:00am - 5:00pm

State of business: Florida

Status: Corporation

Date business was incorporated: 04/13/2009, Florida

Location of the office in Miami from which the work is to be done: 8281 NW 64th Street, Miami, FL, 33166

Number of professional staff employees at that office: 7 Administrative staff members

Is the business a parent or subsidiary in a group of firms or agencies? No

Project Approach

Our approach to fulfilling the requirements outlined in the scope of services will be guided by the standards and directives provided in the Invitation to Bid (ITB) document. We understand the importance of aligning with the specifications and expectations set forth, and our extensive experience with similar projects helps us to deliver quality results efficiently and effectively.

If awarded the contract, we will prepare a comprehensive schedule detailing each phase of the project, including milestones and key deliverables. This schedule will serve as a framework for managing project timelines, resources, and quality controls. We will work closely with the assigned Engineer and the City Project Manager to review this plan in depth, ensuring mutual understanding and making any necessary adjustments to best meet project objectives.

Experience and Qualifications

Licensed, Bonded, and Insured

Basile USA, LLC is fully licensed, bonded, and insured to operate within the State of Florida, ensuring compliance with all state and local regulations. Our licenses cover all relevant activities, including excavation, roadwork, water, sewer and drainage installation. Our bonding and insurance provide the City of Opa-Locka with additional security and peace of mind, guaranteeing that all work will be completed in accordance with the contract and industry standards.

Personnel and Expertise

We have a highly qualified team of professionals experienced in executing large-scale public works projects.

Our team includes:

• Licensed Civil Engineers: Specializing in roadway, drainage, and infrastructure improvements.

• Project Managers: Experienced in overseeing complex public projects, ensuring adherence to timelines and budgets.

• Skilled Laborers and Technicians: Certified in operating heavy machinery and performing specialized tasks such as paving, drainage system installation, and sidewalk repair.

We have the flexibility to adjust our workforce size to meet project demands, ensuring sufficient manpower is available throughout the project's lifecycle.

Equipment and Machinery

Our company owns and operates a diverse fleet of modern, well-maintained equipment necessary to complete all project tasks efficiently, including:

- Excavators and Backhoes for earthmoving and site preparation.
- Paving Machines for roadway resurfacing and paving.
- Concrete Mixers for gutter, curb, and sidewalk construction.
- Grading and Compaction Equipment to ensure a stable foundation for all roadway work.
- Dump Trucks for transporting materials to and from the job site.

All equipment undergoes regular maintenance to minimize downtime and ensure optimal performance throughout the project.

Materials and Inventory

Basile USA, LLC has established partnerships with reliable suppliers to ensure the continuous availability of high-quality materials, including:

- Asphalt and Concrete for roadway paving and sidewalk repairs.
- Drainage Pipes and Components for stormwater management systems.
- Curb and Gutter Materials for roadway improvement projects.

Additionally, we maintain a robust inventory of essential materials to prevent any delays caused by supply shortages.

Project Management and Execution

We have a strong track record of managing similar public infrastructure projects with a focus on:

- Timely Completion: Our team is skilled at meeting tight deadlines without compromising quality.
- Safety: All personnel are trained in safety protocols to ensure a safe working environment.
- Quality Assurance: We implement strict quality control measures to ensure that all work meets the City of Hialeah's standards and specifications.

Previous Experience

Basile USA, LLC has successfully completed similar projects for municipalities throughout Florida, including:

- Drainage Improvement Projects for City of Aventura and Town of Miami Lakes
- Water Improvement Projects for City of Hallandale and City of North Miami

Paving, Curb, and Sidewalk Repairs for City of Hollywood, which improved pedestrian and vehicle access while meeting ADA compliance.

Conclusion

Basile USA, LLC is fully prepared to allocate the necessary personnel, equipment, and materials to complete the work outlined under the City of Opa- Locka's agreement.

As a licensed, bonded, and insured contractor, we ensure that our work will meet the highest industry standards, providing the City with confidence in the successful execution of this project.

We appreciate the opportunity to partner with the City of Hialeah and look forward to delivering a successful project.

Sincerely,

Luigi Basile

President

3864 SW 30TH Avenue, Ft. Lauderdale, FL. 33312
Phone: (954) 300-4200
Email: info@basileusa.com
www.basileusa.com

Schedule

TBD

Pricing of Services

Illustrated in Bid Proposal Form.

References

Name of the Project: Royal Lakes First Addition Drainage Improvements Project

Name of Project Owner: Town of Royal Lakes

Scope of work: The Work consisted of furnishing all labor, materials, machinery, tools, means of transportation, supplies, equipment, and services necessary for drainage and road improvements including drainage system installation, milling, and resurfacing, thermoplastic pavement markings, and site restoration [including landscaping swale, concrete curb and gutter, driveways (asphalt, paver, or concrete) mailbox, street signs, etc.

Value of Project: $1,590,734.00

Name of contact person: Anaily Padron/ Capital Improvement Project Manager

Phone: 305.364.6100 / padrona@miamilakes-fl.gov

Name of the Project: FY 2022-2023-017 Layne Blvd. 12 inch Water Main Project

Name of Project Owner: City of Hallandale

Scope of work: Furnished and installed new potable water piping, valves, and fire hydrants, connecting to existing potable water piping, abandoning existing potable water piping, and all ancillaries associated with the completion of the work.

Value of Project: $3,128,515.90

Name of contact person: Jesus Padron/ Project Manager Public Works Department

Phone: 954.457.1397 / jpadron@hallandalebeachfl.gov

Name of the Project: IFB No. 27-21-22 NW 141St Water Main Improvements Project

Name of Project Owner: City of North Miami

Scope of work: Furnished all labor, equipment and materials to install a new 8-inch water main on NW 141St street. The project included the installation of the new utility, connection to the existing City water main system, water services and water meter connections, fire hydrants, isolation and air release valves, utility testing, abandonment of existing water mains, maintenance of traffic, roadway and site restoration.

Value of Project: $672,862.98

Name of contact person: Yadly St Fort/ Civil Engineer Public Works Department

Phone: 305.893.6511 / ysaintfort@northmiamifl.gov

MIAMI LAKES
Growing Beautifully

6601 Main Street Miami Lakes, FL. 33014

May 17, 2024

Subject: Recommendation for Basile USA, LLC. ITB 2023-19 Royal Lakes First Addition.

To Whom It May Concern:

I am pleased to recommend Basile USA, LLC. an underground utilities company that has provided outstanding service to our city. Their consistent delivery of high-quality work, adherence to schedules, and commitment to excellence have made them a valuable partner in our infrastructure projects.

Basile USA, LLC. has demonstrated exceptional professionalism and expertise. Their team approaches each project with meticulous attention to detail, ensuring all tasks are completed to the highest standards. Their proactive communication has been instrumental in keeping stakeholders informed and addressing issues promptly, preventing delays and ensuring smooth project progression.

Furthermore, Basile USA, LLC. has shown the ability to work within budgetary constraints without compromising on quality. Their efficient project management and innovative solutions have saved us time and resources, enhancing the overall effectiveness of our projects.

I highly recommend Basile USA, LLC. for any underground utility work. Their proven track record of excellence and dedication to customer satisfaction make them an outstanding choice for any project.

Should you have any questions, please contact me at padrona@miamilakes-fl.gov or (305) 512-7133.

Sincerely,

Anaily Padron, P.E.
Capital Improvements Project Manager
Town of Miami Lakes

NORTH MIAMI
FLORIDA
Public Works Department
Water & Sewer Division
Utility Operations Center
1815 N.E. 150 Street · North Miami, FL 33181 · T: (305) 895-9838
www.northmiamifl.gov

May 15, 2024

Subject: Recommendation for Basile USA, LLC.

Dear FDOT,

I am pleased to recommend Basile USA, LLC., an underground utilities company that has provided outstanding service to the City of North Miami. Their consistent delivery of high-quality work, adherence to schedules, and commitment to excellence have made them a valuable partner in our infrastructure projects.

Basile USA, LLC. has demonstrated exceptional professionalism and expertise. Their team approaches each project with meticulous attention to detail, ensuring all tasks are completed to the highest standards. Their proactive communication has been instrumental in keeping stakeholders informed and addressing issues promptly, preventing delays and ensuring smooth project progression. Basile USA, LLC. has shown the ability to work within budgetary constraints without compromising on quality.

I highly recommend Basile USA, LLC. for any underground utility work.

Sincerely,

Yadly St Fort

Yadly St Fort
Civil Engineer
Public Works Department
Utility Operations Center (UOC)
1815 NE 150 Street
North Miami, FL 33181

Department of Public Works

CITY OF Hollywood FLORIDA

tel: 954.967.4526
fax: 954.967.4510

May 16, 2024,

Basile USA, LLC.
3830 S.W. 30th Ave.
Fort Lauderdale, FL. 33312

Subject: Letter of Recommendation for Basile USA, LLC.

I am pleased to write this letter of recommendation for Basile USA, LLC., an underground utility company that has consistently delivered exceptional and timely work for the City of Hollywood, Florida. Over the past several projects, Basile USA, LLC. has demonstrated outstanding professionalism, efficiency, and a strong commitment to quality, making them a reliable partner in our infrastructure development.

Their team's expertise and attention to detail have ensured that all projects were completed on schedule and within budget, often exceeding our expectations. Their proactive communication and problem-solving abilities have greatly contributed to the smooth execution of our projects, minimizing disruptions, and ensuring public safety.

I highly recommend Basile USA, LLC. for any underground utility work. Their proven track record of excellence and dedication to customer satisfaction make them an invaluable asset to any project.

Sincerely,

Joseph S. Kroll MPA, CPM, CFM

Director Public Works

2600 Hollywood Boulevard
P.O. Box 229045
Hollywood, Florida
33022-9045

hollywoodfl.org

PROPOSER QUALIFICATIONS

The Proposer, MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: BASILE USA LLC

   Address: 3864 SW 30th Avenue

   City, State, Zip: Fort Lauderdale, FL, 33312 Phone/Fax: 954.300.4200

2. Check One: Corporation (X) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: 04/14/2009 State in which Incorporated: Florida

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization: N/A

5. **Name and Title of Principal Officers** **Date Elected:**

Luigi Basile	03/23/2016

6. The length of time in business: 16 years

7. The length of time (continuous) in business as a service organization in Florida: 16 years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka ITB during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

LOPEZ, ALEXIS

BASILE USA, LLC
2939 SW 30 COURT SUITE A
MIAMI FL 33133

LICENSE NUMBER: CGC1517617

EXPIRATION DATE: AUGUST 31, 2026

Always verify licenses online at MyFloridaLicense.com

ISSUED: 05/15/2024

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

CITY OF HOLLYWOOD
TREASURY SERVICES DIVISION
LOCAL BUSINESS TAX

BASILE USA LLC
3830 SW 30 AVE, STE 105
HOLLYWOOD, FL 33312

Please contact us with any changes or corrections to your information.

CUSTOMER SERVICE: Should you have any questions regarding Local Business Tax or need to update / correct any information related to your Business Tax Account, please contact us by phone at 954-921-3225, by email at businesstax@hollywoodfl.org or in person at City Hall, Room 103, 2600 Hollywood Blvd. Please send all written correspondence to: City of Hollywood, Treasury Services Division, Attn: Business Tax, Room 103, PO Box 229045, Hollywood, FL 33022-9045.

PURSUANT TO STATE LAW, LOCAL BUSINESS TAX IS LEVIED FOR THE PRIVILEGE OF DOING BUSINESS WITHIN A CITY'S LIMITS, AND IS NON-REGULATORY IN NATURE. ISSUANCE OF A LOCAL BUSINESS TAX RECEIPT BY THE CITY OF HOLLYWOOD DOES NOT MEAN THAT THE CITY HAS DETERMINED THAT THE EXISTING OR PROPOSED USE OF A LOCATION IS LAWFUL. ISSUANCE OF A LOCAL BUSINESS TAX RECEIPT DOES NOT LEGALIZE OR CONDONE THE NATURE OF THE BUSINESS BEING CONDUCTED IF CONTRARY TO ANY LOCAL, STATE OR FEDERAL LAW OR REGULATION.

THIS IS NOT A BILL. DO NOT PAY.

BELOW IS YOUR LOCAL BUSINESS TAX RECEIPT. PLEASE DETACH AND POST THIS LOCAL BUSINESS TAX RECEIPT IN A CONSPICUOUS PLACE AT YOUR PLACE OF BUSINESS.

CITY OF Hollywood FLORIDA

2024/2025 LOCAL BUSINESS TAX RECEIPT

Business Name: **BASILE USA LLC**
DBA:
Business Location: **3830 SW 30 AVE, #105**
Business Category: **SERVICE/LICENSED BUSINESS**
Classification: **Contractor/General**
Tax Basis: **5 - 25 WORKERS**

Account Registration #: **B9077205-2025**
Expiration Date: **9/30/2025**
Tax Rate: **$316.00**

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name Luigi Basile

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by Luigi Basile
(Name)

the President (Title/Position) of BASILE USA LLC (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

11/12/2024
Date

Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the Owner (Owner, Partner, Officer, Representative or Agent) of BASILE USA LLC the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

Witness

Witness

By: _____
Signature

Luigi Basile / President
Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By: Luigi Basile

Title: President

Sworn and subscribed before this

13 day of 11, 2024

Notary Public, State of Florida

America Imbrondone
Comm. # HH 139671
My Commission Expires:
September 23, 2025

(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract isa condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: BASILE USA LLC

Authorized Signature: _____

Print Name: Luigi Basile

Title: President

Date: 11/12/2024

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and others or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: Luigi Basile / President

Sworn and subscribed before me this

13 day of November, 2024

_____

Notary Public
State of Florida at Large My commission expires:

America Imbrondone
Comm: HH 139671
My Commission Expires:
September 23, 2025

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

Junior Bergel

From: md.rahman@safaconstruction.net
Sent: Friday, November 15, 2024 11:41 AM
To: Junior Bergel
Cc: Adelina Gross
Subject: Clarification of performance bond for RFP- 24-1114200 (Cairo Ln)

Hi Junior,

The bid submitted for the subject project (Cairo Ln & NW 127th Street Drainage, Utilities, and Roadway Improvements Project) included the performance bond. In other words, it included all the costs. The total bid is 5,409,874.00.

Thanks,
MD

Sincerely,

MD Shahinur Rahman, CGC, PMP, MS
CEO
SAFA CONSTRUCTION, LLC
SBE | CBE
(954) 326-8295
md.rahman@safaconstruction.net

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

RFP NO: 24-1114200

CITY OF OPA-LOCKA – REQUEST FOR PROPOSAL (RFP)

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

780 FISHERMAN STREET
OPA-LOCKA, FL 33054

Miami-Dade County, Florida

Prepare For:

CITY OF OPA-LOCKA

Prepared By:

SAFA CONSTRUCTION, LLC

SAFA CONSTRUCTION, LLC

November 2024

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A. Cover Letter

November 13, 2024

City of Opa-Locka

Procurement Office

780 Fisherman Street

Opa-locka, FL 33054

Subject: Bid Proposal Submittal for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project (RFP NO: 24-1114200)

Dear City of Opa-Locka,

I am writing to submit my bid proposal for the Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project as advertised by your esteemed organization. As a highly skilled and experienced Safa Construction, I am confident that my proposal will meet and exceed your expectations.

I have carefully reviewed the project requirements outlined in the Request for Proposal (RFP) document and believe that my expertise aligns perfectly with the needs of the project. I have a proven track record of delivering exceptional results in similar projects, and I am eager to bring my skills and knowledge to contribute to the success of your project.

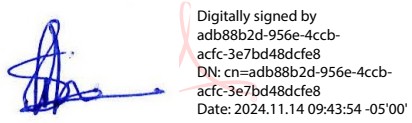
I take great pride in my professionalism, attention to detail, and commitment to delivering projects on time and within budget. Throughout my career, I have built strong relationships with clients by actively listening to their needs, communicating effectively, and providing tailored solutions. I am confident that my dedication to customer satisfaction and my ability to adapt to changing project requirements will make me an ideal partner for this endeavor.

Furthermore, I understand the importance of collaboration and teamwork in achieving project success. I am ready to work closely with your team, actively participating in meetings, sharing progress reports, and addressing any concerns promptly. By fostering open communication and maintaining a strong work ethic, I am confident that we can achieve outstanding results together.

Thank you for considering my bid proposal for the Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project, I am excited about the possibility of collaborating with your organization and contributing to the success of this project. I am available for further discussion or clarification at your convenience.

I look forward to the opportunity of meeting with the City of Opa-Locka and discussing how we can best move forward. Once again, thank you for your time and consideration.

Sincerely,



MD Shahinur Rahman, CGC, PMP, MS, PE (CA, FL)

PRESIDENT /CEO

SAFA CONSTRUCTION, LLC

B1. Insurance information

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/11/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: STACEY FRIEDMAN	
Insurance by Rob 4801 Johnson Road #13-14 Coconut Creek FL 33073	PHONE (A/C, No, Ext): (954) 331-4468	FAX (A/C, No):
	E-MAIL ADDRESS: service@InsuranceByRob.com	
	INSURER(S) AFFORDING COVERAGE	**NAIC #**
INSURED SAFA CONSTRUCTION, LLC 11186 SW 17th Mnr Davie FL 33324	INSURER A : SECURITY NATIONAL INSURANCE CO	19879
	INSURER B : INFINITY ASSUR INS CO	39497
	INSURER C : SECURITY NATIONAL INSURANCE CO	19879
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [ ] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:			SES1814296 01	05/06/2024	05/06/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG [ ]	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
B	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			50015963501	10/20/2024	10/20/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP	$ 1,000,000 $ $ $ $ 10,000
C	[ ] UMBRELLA LIAB [X] OCCUR [X] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			EXS1821606 00	05/06/2024	05/06/2025	EACH OCCURRENCE AGGREGATE [ ]	$ 2,000,000 $ 2,000,000 $
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N [ ] **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					[ ] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CITY OF OPA-LOCKA
780 FISHERMAN ST
OPA LOCKA FL 33054

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Stacey Friedman

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/11/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy (ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER FrankCrum Insurance Agency, Inc. 100 South Missouri Avenue Clearwater, FL 33756	CONTACT NAME: FrankCrum Certificate Department PHONE: (800) 277-1620 X 4800 FAX: (727) 797-0704 E-MAIL ADDRESS: certs@frankcrum.com	
	INSURERS(S) AFFORDING COVERAGE	**NAIC#**
	INSURER A: **Frank Winston Crum Insurance Company**	**11600**
INSURED FrankCrum L/C/F SAFA Construction, LLC 100 South Missouri Avenue Clearwater, FL 33756	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 1259787 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSRD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURENCE	$
	CLAIMS MADE OCCUR						DAMAGE TO RENTED PREMISES (Ea occurence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY PROJECT LOC						PRODUCTS-COMP/OP AGG	$
	OTHER							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE UNIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURENCE	$
	EXCESS LIAB CLAIMS MADE						AGGREGATE	$
	DED RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC202400000	01/01/2024	01/01/2025	X PER STATUE OTHER	
							E.L. EACH ACCIDENT	$1,000,000
							E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Effective 04/01/2024, coverage is for 100% of the employees of FrankCrum leased to SAFA Construction, LLC (Client) for whom the client is reporting hours to FrankCrum. Coverage is not extended to statutory employees.

CERTIFICATE HOLDER	**CANCELLATION**
City of Opa-locka 780 Fisherman Street OPA LOCKA, FL 33054-	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. **AUTHORIZED REPRESENTATIVE**

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B2.Debarment, Suspension Certification

CITY OF OPA-LOCKA

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. Failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non-responsive.

D. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature 

Printed Name MD SHAHINUR RAHMAN, CEO

B3. Drug-Free Certification

CITY OF OPA-LOCKA

RFP NO. 24-1114200

DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the CITY OF OPA-LOCKA for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by MD SHAHINUR RAHMAN the
(Name)
CEO of SAFA CONSTRUCTION, LLC
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

11/11/2024
Date Signature

B4. Non-Collusion Affidavit

CITY OF OPA-LOCKA
NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA - COUNTY OF MIAMI DADE

I, MD SHAHINUR RAHMAN **being first duly sworn, deposes and says that:**

(1) He/She/They is/are the OWNER OF SAFA CONSTRUCTION, LLC (Owner, Partner, Officer, Representative or Agent) of _____ the PROPONENT that has submitted the attached proposal;

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;

(3) Such Proposal is genuine and is not a collusive or sham Proposal;

(4) Neither the said PROPONENT nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other PROPONENT, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any PROPONENT, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other PROPONENT, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other PROPONENT, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the PROPONENT or any other of its agents, representatives, owners, employees or parties of interest, including this affiant.

Signed, sealed and delivered in the presence of:

_____ By: _____
Witness Signature

_____ MD SHAHINUR RAHMAN, CEO
Witness Print Name and Title

B5. Non-Discrimination Affidavit

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business or entity represented herein shall not discriminate against any person in its operations, activities or delivery of services under any agreement it enters into with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By: MD SHAHINUR RAHMAN

Title: CEO

Sworn and subscribed before this

14th day of November, 2022

Ayesha Hack

Notary Public, State of Florida

AYESHA HACK

(Printed Name)

My commission expires: 04-17-2026

AYESHA HACK
Notary Public - State of Florida
Commission # HH 222913
My Comm. Expires Apr 17, 2026
Bonded through National Notary Assn.

B6. E-Verify Form

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter into a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors and subcontractors will begin required registration with, and use of the E-verify system in order to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subcompanies/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering into this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of such affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: SAFA CONSTRUCTION, LLC

Authorized Signature: 

Print Name: MD SHAHINUR RAHMAN

Title: CEO

Date: 11/11/2024

B7. Certification Regarding Debarment

CITY OF OPA-LOCKA

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. Failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non-responsive.

D. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Proposer knowingly

rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature 

Printed Name MD SHAHINUR RAHMAN

B8. Anti-kickback Affidavit

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)

) ss:

COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and City Engineer or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: MD Shahinur Rahman (Safa Construction,LLC)

Title: President /CEO

Sworn and subscribed before me this

11 day of November, 20 24

Notary Public
State of Florida at Large My

commission expires:

Syed A. Zaman
Comm.: HH 584021
Expires: Oct. 23, 2028
Notary Public - State of Florida

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

B9. Licenses

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

RAHMAN, MD SHAHINUR

SAFA CONSTRUCTION, LLC
11186 SW 17TH MNR
DAVIE FL 33324

LICENSE NUMBER: CGC1531601

EXPIRATION DATE: AUGUST 31, 2026

Always verify licenses online at MyFloridaLicense.com

ISSUED: 06/21/2024

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

RAHMAN, MD SHAHINUR

11186 SW 17T MNR
DAVIE FL 33324

LICENSE NUMBER: PE80669

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Ron DeSantis, Governor

Melanie S. Griffin,Secretary

FBPE
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

STATE OF FLORIDA

BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

SHUVO, DILNAHAR HOSSAIN

11186 SW 17TH MNR
DAVIE FL 33324

LICENSE NUMBER: PE92997

EXPIRATION DATE: FEBRUARY 28, 2025

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

C. Evaluation Criteria

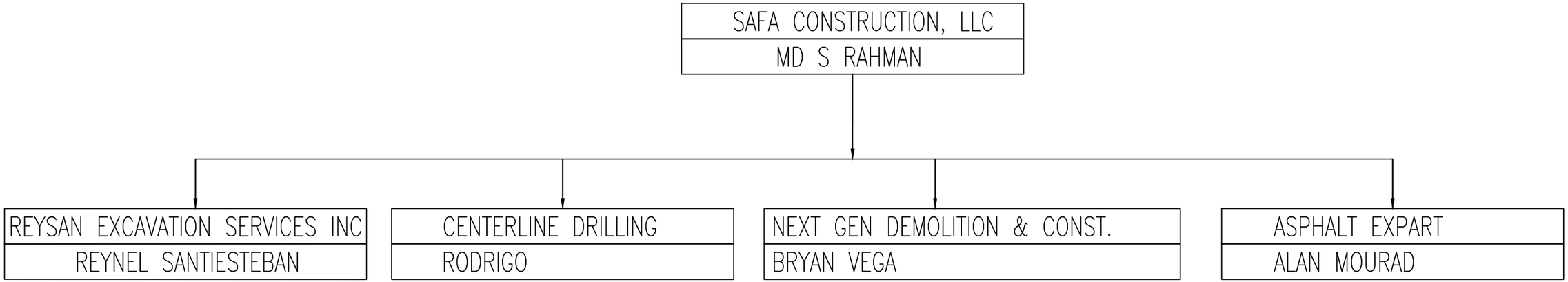
C1. Experience and Qualifications
- i. Organizational structure of the project and Responsibility
- ii. Quality Control Process
- iii. Construction Phases
- iv. Brief resume of key persons
- v. Applicable certifications

C2. Resources and approaches
C3. References
C4. Schedule
C5. Price Proposal

C 1.i : Organizational structure of the project and Responsibility

ORGANIZATIONAL STRUCTURE AND MAJOR ACTIVITY RESPONSIBILITY OF THE PROJECT

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT
(RFP NO: 24-1114200)



COMPANY NAME	MAJOR ACTIVITYS
SAFA CONSTRUCTION	DRAINAGE, CONCRETE PAVEMENT, MOT
REYSAN EXCAVATION SERVICES INC	WATER & SEWER
NEXT GEN DEMOLITION & CONST.	ALL DEMO WORK (EX. UNDERGROUND DRAINAGE, FH ETC)
ASPHALT EXPART	ALL ASPHALT WORKS
CENTERLINE DRILLING	DIRECTIONAL DRILLING UNDER 135TH STREET

NO.	REVISIONS	DATE	BY

SAFA CONSTRCTION, LLC
11186 SW 17TH MNR
DAVIE, FL 33324
PH (954) 326-8295

SAFA CONSTRUCTION, LLC

PROJECT NO.
2024-XXX

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT
RFP NO: 24-1114200
MIAMI DADE COUNTY FLORIDA

ORGANIZATIONAL STRUCTURE AND MAJOR ACTIVITY RESPONSIBILITY

DRAWN BY:
CHECKED BY:
DATE:
SHEET NO.

The Proposer, as a result of this proposal, MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: SAFA CONSTRUCTION, LLC

   Address: 11186 SW 17TH MNR

   City, State, Zip: DAVIE, FL 33324 Phone/Fax: (954) 326-8295

2. Check One: Corporation (✓) Partnership ( ) Individual ( )

3. If Corporation, state:
   Date of Incorporation: 09/20/2021 State in which Incorporated: FL

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization: N/A

5. **Name and Title of Principal Officers** **Date Elected:**

MD S RAHMAN, CGC,PE, PMP (CEO)	09/20/2021
DILNAHAR H SHUVO, PE (AR)	09/20/2021

6. The length of time in business: 3 (three) + years **Please Note that I (MD Shahinur Rahman) has 20+ years experience in construction and 20+ years Engineering experience)**

7. The length of time (continuous) in business as a service organization in Florida: 3 (three) + years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka specification, during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

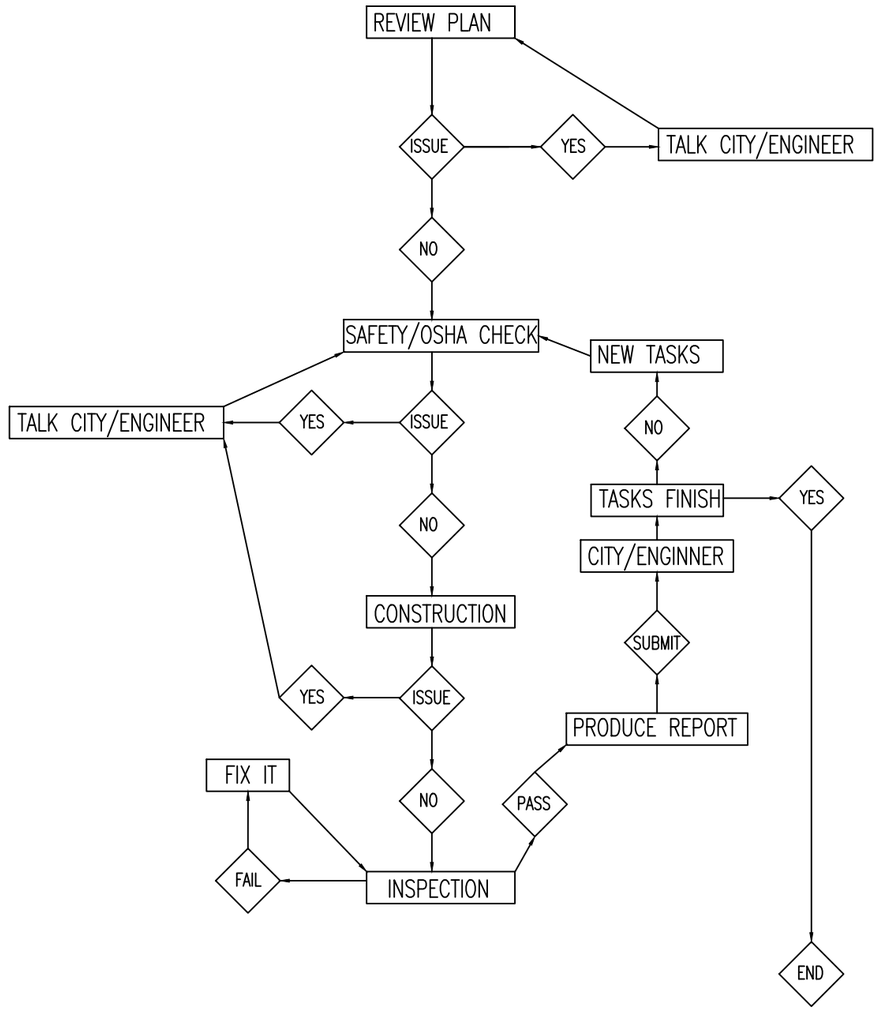
Note: *Information requested herein and submitted by the proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

With this short period of time SAFA Construction has done ten (10) public projects and out of 10, 4 project with city of OPA-LOCKA.

C 1.ii: Quality Control Process

GENERAL OUTLINE FOR QUALITY CONTROL PLAN

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT
(RFP NO: 24-1114200)



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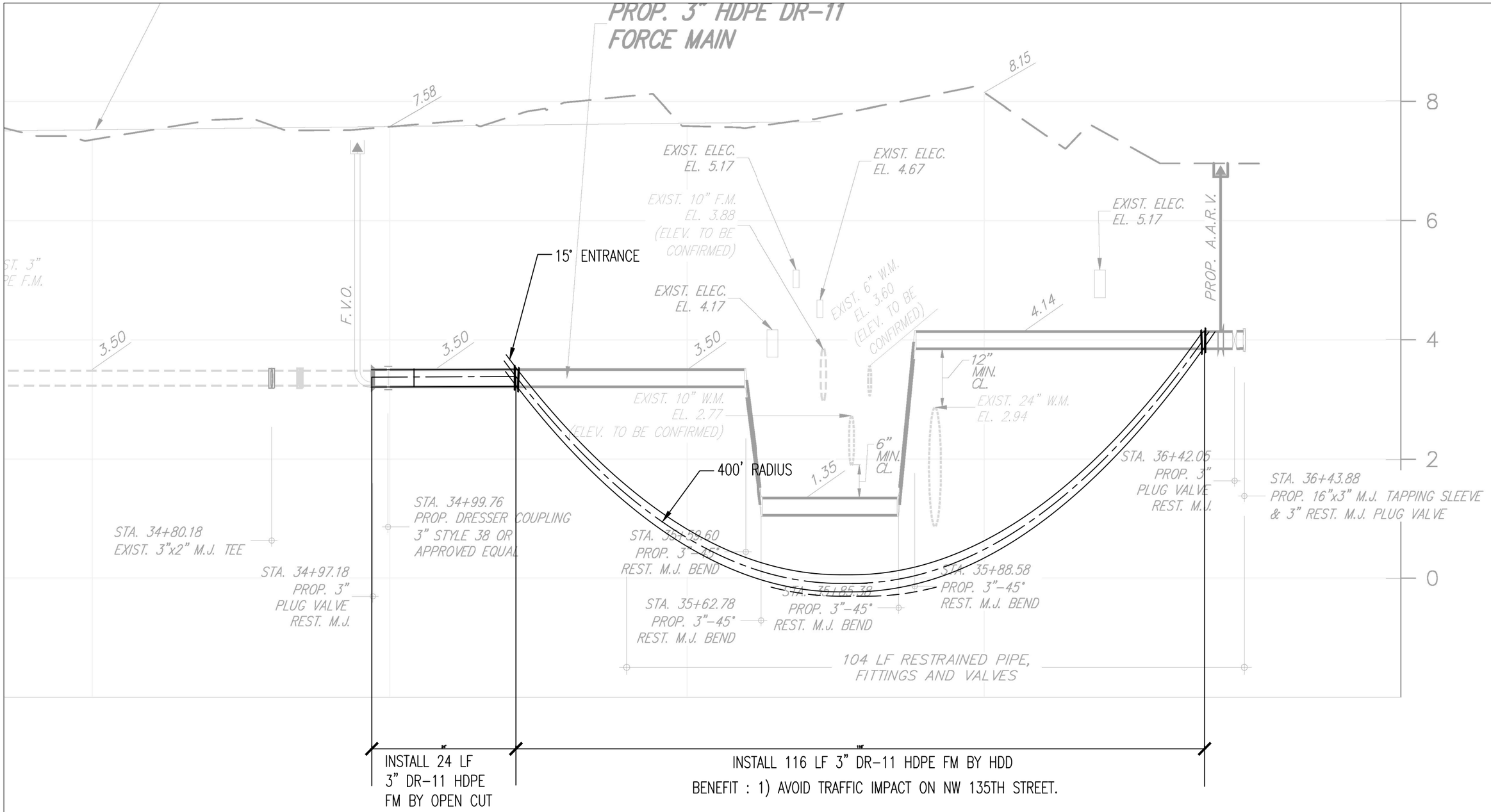
PROJECT NO.
2024-XXX

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT
RFP NO: 24-1114200
MIAMI DADE COUNTY FLORIDA

QUALITY CONTROL CHART

DRAWN BY:
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C 1.iii: Construction Phases



NO.	REVISIONS	DATE	BY

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PROJECT NO.

2024-XXX

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

RFP NO: 24-1114200

MIAMI DADE COUNTY FLORIDA

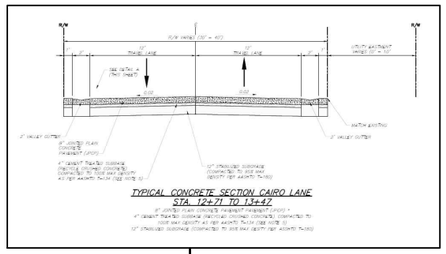
DIRECTIONAL DRILLING UNDER 135TH STREET
(SUBJECT TO APPROVAL FROM THE CITY)
NO ADDITIONAL COST

DRAWN BY:

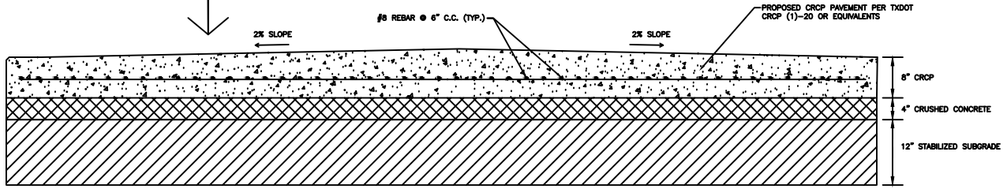
CHECKED BY:

DATE:

SHEET NO.







CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

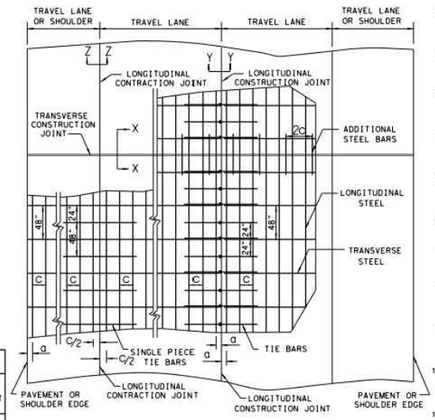
BENEFIT : CONTINUOUSLY REINFORCED CONCRETE IS AN EXCELLENT LONG-LIFE PAVEMENT SOLUTION FOR HIGHLY-TRAFFICKED AND HEAVILY-LOADED ROADWAY.

SOURCE : HTTPS://WWW.FHWA.DOT.GOV/PAVEMENT/CONCRETE/PUBS/HIF16026.PDF

DISCLAIMER:
"The use of these standards is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use."

TABLE NO. 1 LONGITUDINAL STEEL					
SLAB THICKNESS AND BAR SIZE		REGULAR STEEL BARS	FIRST SPACING AT EDGE OR JOINT	ADDITIONAL STEEL BARS AT TRANSVERSE CONSTRUCTION JOINT (SECTION X-X)	
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING Q (IN.)	SPACING 2 x C (IN.)	LENGTH L (IN.)
7.0	#5	6.5	3 TO 4	13	50
7.5	#5	6.0	3 TO 4	12	50
8.0	#6	9.0	3 TO 4	18	50
8.5	#6	8.5	3 TO 4	17	50
9.0	#6	8.0	3 TO 4	16	50
9.5	#6	7.5	3 TO 4	15	50
10.0	#6	7.0	3 TO 4	14	50
10.5	#6	6.75	3 TO 4	13.5	50
11.0	#6	6.5	3 TO 4	13	50
11.5	#6	6.25	3 TO 4	12.5	50
12.0	#6	6.0	3 TO 4	12	50
12.5	#6	5.75	3 TO 4	11.5	50
13.0	#6	5.5	3 TO 4	11	50

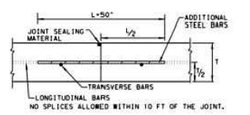
TABLE NO. 2 TRANSVERSE STEEL AND TIE BARS						
SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONSTRUCTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5	48	#5	48	#5	24
8.0 - 13.0	#5	48	#6	48	#6	24



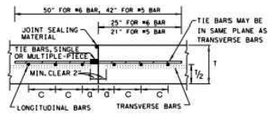
TYPICAL PAVEMENT LAYOUT
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

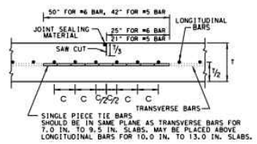
1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT ARE NOT COVERED BY THIS STANDARD.
2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (CoTE) OF NOT MORE THAN 5.5 X 10^{-6} IN/IN/ °F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1
5. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
6. THE SAW CUT DEPTH FOR THE LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z) SHALL BE ONE THIRD OF THE SLAB THICKNESS (T/3).
7. WHEN TYING CONCRETE GUTTER AT A LONGITUDINAL JOINT, THE TIE BAR LENGTH OR POSITION MAY BE ADJUSTED, PROVIDE 3 IN. OF CONCRETE COVER FROM THE BACK OF GUTTER TO THE END OF TIE BAR.
8. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
9. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
10. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM OF 25 IN. STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT.
11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

ONE LAYER STEEL BAR PLACEMENT
T - 7 to 13 INCHES

CRCP(1)-20

File: crcp120.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT: APRIL 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10/10/2011 REMOVE #7 BAR & 5" SLAB THICKNESS	DIST	COUNTY		SHEET NO.
09/20/2017 ADD CTC REQUIREMENTS				
05/20/2019 CRCP AS PATED 4.3				

BASIC FILE

NO.	REVISIONS	DATE	BY

SAFA CONSTRCTION, LLC
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DAVIE, FL 33324
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SAFA CONSTRUCTION, LLC

PROJECT NO.
2024-XXX

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT
RFP NO: 24-1114200
MIAMI DADE COUNTY FLORIDA

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
(SUBJECT TO APPROVAL FROM THE CITY)
ALL OVER THE PROJECT- NO ADDITIONAL COST

DRAWN BY:
CHECKED BY:
DATE:
SHEET NO.



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MIAMI DADE COUNTY FLORIDA

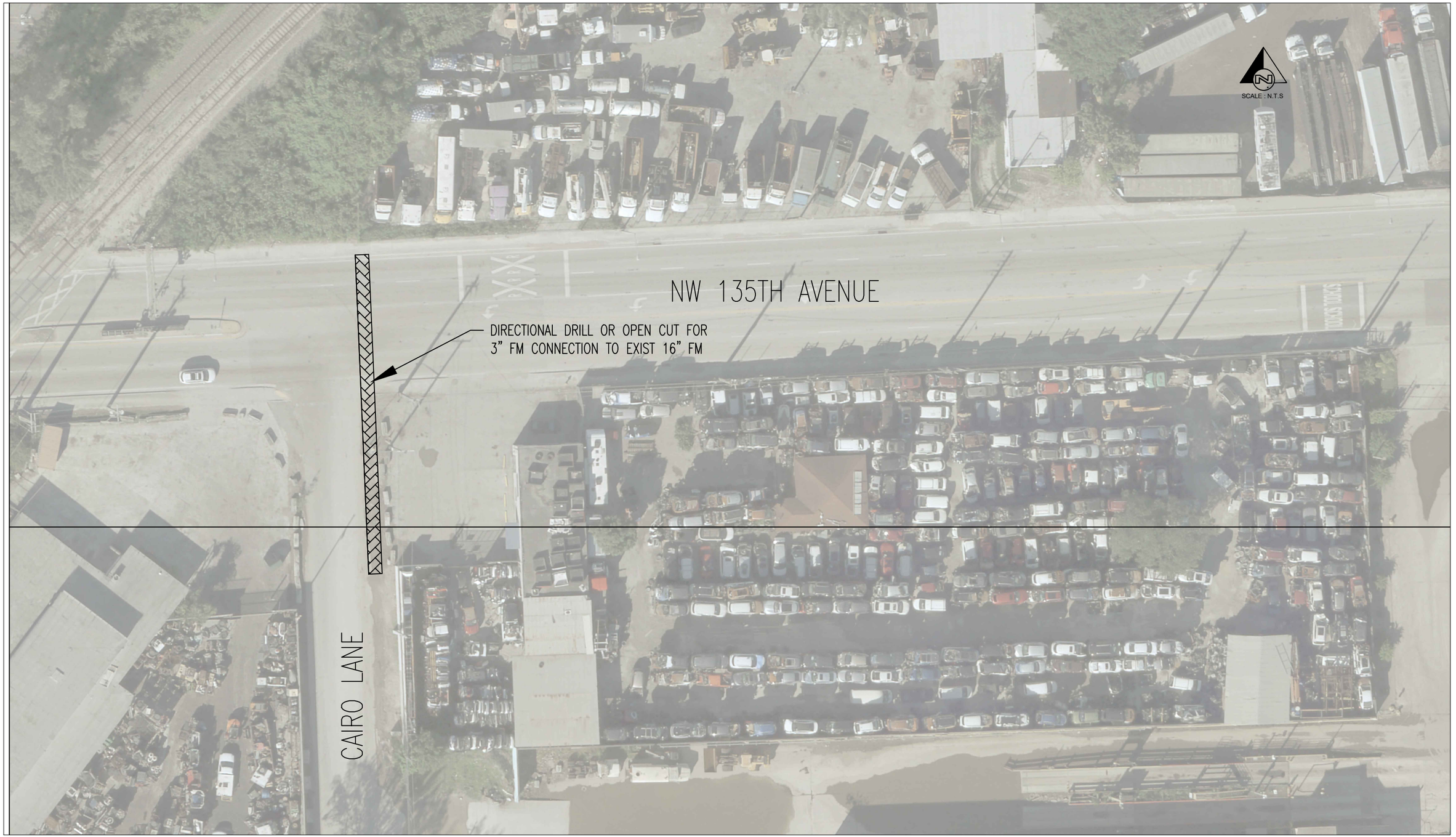
CONSTRUCTION - PHASE 1
CONSTRUCT NEW TRATMENT SYSTEM WITH OUTFALL

DRAWN BY:

CHECKED BY:

DATE:

SHEET NO.



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2024-XXX

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RFP NO: 24-1114200

MIAMI DADE COUNTY FLORIDA

CONSTRUCTION - PHASE 2
3" FORCEMAIN CONNECTION TO EXISTING FM

DRAWN BY:
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DATE:
SHEET NO.



SCALE : N.T.S

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PH (954) 326-8295

SAFA CONSTRUCTION, LLC

PROJECT NO.

2024-XXX

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RFP NO: 24-1114200

MIAMI DADE COUNTY FLORIDA

CONSTRUCTION - PHASE 3
REMOVE ALL GARBAGE, UNSUITABLE ETC

DRAWN BY:

CHECKED BY:

DATE:

SHEET NO.



SCALE : N.T.S

NO.	REVISIONS	DATE	BY

SAFA CONSTRCTION, LLC
11186 SW 17TH MNR
DAVIE, FL 33324
PH (954) 326-8295

SAFA CONSTRUCTION, LLC

PROJECT NO.

2024-XXX

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RFP NO: 24-1114200

MIAMI DADE COUNTY FLORIDA

CONSTRUCTION - PHASE 4
PERFORM ALL UTILITY AND ROADWAY WORK

DRAWN BY:
CHECKED BY:
DATE:
SHEET NO.



SCALE : N.T.S

NO.	REVISIONS	DATE	BY

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DAVIE, FL 33324
PH (954) 326-8295

SAFA CONSTRUCTION, LLC

PROJECT NO.

2024-XXX

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

RFP NO: 24-1114200

MIAMI DADE COUNTY FLORIDA

CONSTRUCTION - PHASE 5
MEDIAN OPENING-NW 32 ND AVENUE

DRAWN BY:
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DATE:
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C 1.iv: Brief resume of key person

MD Shahinur Rahman, CGC, PMP, MS, PE (CA, FL),

President

SAFA CONSTRUCTION, LLC

EDUCATION

- Master of Science in Computer Science, Texas A&M University, TX, 2003
- Bachelor of Science in Civil Engineering, Bangladesh University of Engineering and Technology (BUET), 1998

PROFESSIONAL CERTIFICATIONS

- Certified General Contractor CGC License No. 1531601
- Professional Engineer FL PE License No. 80669
- Professional Engineer CA PE License No. 75093
- Project Management Professional, Cert No 1474518

PROFESSIONAL TRAINING

- 30 Hours OSHA
- Advanced MOT Certification

KEY EXPERIENCE

- Construction Administration
- CPM Scheduling
- Asset Management
- Contract Negotiation
- Strategic Planning
- Estimating and Bids
- Value Engineering
- Quality Assurance
- Business Development
- Clients Relationship
- Procurement
- Leadership

WORK HISTORY

- SAFA Construction LLC.
- SSN Engineering
- Marlin Engineering
- Kimley-Horn and Associates

SUMMARY OF EXPERIENCE

Over Twenty (20) years of professional experience in Civil Engineering and leading all functions of Heavy Civil Construction and Project Management including Contract Administration, Accounting, Planning, Design, Processing, Specs Review, Field Supervision and Operations, Managing Staff, Mentoring young Professionals, Supervising sub-contractors, Budgeting, Scheduling, Progress Reporting and Timely Completion of Projects. Mr. MD's areas of expertise are:

- Manage contracts and completion of several municipal, commercial and private construction projects from a variety range of scopes and in excess of $15 Billion.
- Monitoring the progress of contracts administration including design-build projects.
- Receive and analyze bids after award for turnover to management team.
- Execution of construction including supervision of subcontractors, and awarding sub's subcontracts and major purchase orders with vendors and suppliers.
- Work with Senior VP, operations manager, field and office core personnel to establish planning for job Execution and Logistics.
- Evaluate and maintain cost control and forecasting from beginning and thru the duration of project.
- Coordinates requirements of governing authorities for permits, inspections and final approval of the project with A/E.
- Maintain submittal control, including scheduling, receiving, reviewing, approving and expediting submittals from suppliers and subcontractors to comply with progress of CPM schedule.
- Manages client relations and participate with the development of new business for the company.
- Control invoicing from subcontractors and vendors, including review and approval of schedules of values, pay requisitions and verify compliance of subs with proper insurance coverage.
- Review and monitors QC/QA and safety.
- Supervise and assists in the development of office personnel through mentoring and on-the-job training.
- Effectively manages project close-out tasks and warranty work.

PROJECT EXPERIENCES

- Midtown Miam, Miami Dade County FL - Installation of 26,400 LF of 36" C-900 PVC Pipe, 21,400 LF of 42" HDPE pipe including a new meter station and site work restoration for asphalt, concrete sidewalks, curbing, driveways, installation of new drainage structures, piping valves and appurtenances - $25M

- Marriott at Miami Airport , Miami, FL - Installation of 38,500 LF of 28" HDPE and 9,100 LF of 14" HDPE piping system including 200 LF of 30" DIP pipe and overhead metal bridge, nine (9) Recovery Well Systems connected to 28" header pipe with approx. depth from 70-95 feet. FL - $17.0 M

Ms. Shuvo, with eight years of experience, has prepared calculations and plans for the design of highways and streets, including roadway alignments and profiles, signing and striping, lighting, paving, and grading, preforming quantity calculations, design calculations, and project cost estimating, researched standards and specifications and has worked with City, County, State, and Federal manuals utilizing applied software to perform engineering analysis and prepare reports. She also has lighting, sign design and drainage design experience using AGI32, Guide Sign, AutoTurn Analysis and ICPR. Ms. Shuvo has working experience with OpenRoads Designer, MicroStation, AutoCAD, Microsoft Office, HCM 2000, and CORSIM (Version 6.0).

EDUCATION

Master of Science in Civil Engineering, Florida International University (FIU), Florida, 2008

Bachelor of Science in Civil Engineering, Bangladesh University of Engineering & Technology, (BUET), Bangladesh, 2004

REGISTRATION

Professional Engineer #92997, FL

CERTIFICATIONS/TRAINING

Certified, Advanced Work Zone Traffic Control, 2021

Training, FDOT, Specifications Package Preparation, 2016

PROJECT EXPERIENCE

I-95 and Spanish River Boulevard Interchange, Palm Beach County – FDOT District 4

Engineer Intern responsible for assisting in the design for the drainage modifications of Segments 4 and 5. This task was part of the on-going design build project at the I-95 Spanish River Blvd Interchange in Boca Raton, FL. This project included the construction a new two-level interchange, modification of the existing Yamato Road and I-95 interchange, addition of auxiliary lanes from Glades Road to Congress Avenue on I-95 and cross street improvements of Spanish River Blvd. and Yamato Road. This two-level interchange includes coordination with FAA, Boca Airport, City of Boca Raton, and Florida Atlantic University (FAU). This improvement will provide connectivity between FAU, Tri-Rail and I-95 and alleviate daily congestion as well as accommodate traffic generated during events held at the FAU stadium.

Boynton Beach Various Locations, Palm Beach County – FDOT District 4

Project Engineer for this is a federally funded, MPO driven, off-system project to improve mobility along Boynton Beach Blvd. This project has two main corridors with various segments. The first segment runs along Boynton Beach Blvd, the existing travel lanes width will be reduced to provide an 11' and 10' travel lane in each direction with sharrows and an 11' and 15' shared use path. This segment also includes decorative lighting along the corridor. The second segment runs along NE 3rd St, Boynton Beach Blvd, and Ocean Ave providing sharrows. The main items included in the scope are, the accommodation of bicyclists.

City of Oakland Park Lakeside Sidewalks – Various Locations, Broward County – FDOT District 4

Project Engineer for this mobility project consisting of pedestrian improvements for the Lakeside neighborhood. Improvements include filling sidewalk gaps, drainage improvements, and signing and pavement markings.

SR 615/S 25th St from N of Edwards Rd to N of Virginia Ave, St. Lucie County – FDOT District 4

Project Engineer for this RRR project consisting of milling and resurfacing of the existing pavement to extend the service life of the corridor, as well as general highway safety enhancements. The project also includes lighting retrofit at the three signalized intersections and the addition reflectorized backplates.

SR 809/Military Trail from Dyer Blvd to N of Flag Dr, Palm Beach County – FDOT District 4

Project Engineer for this RRR project consisting of milling and

C 1.v: Applicable certifications

Project Management Institute

THIS IS TO CERTIFY THAT

MD SHAHINUR RAHMAN

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND PERFORMANCE IN ACHIEVING AN ORGANIZATIONAL OBJECTIVE THROUGH DEFINING AND OVERSEEING PROJECTS AND RESOURCES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional (PMP)®

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE

Tony Appleby
Chair, Board of Directors

Sunil Prashara
President and Chief Executive Officer

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMP® Number: 1474518
PMP® Original Grant Date: 17 December 2011
PMP® Expiration Date: 16 December 2023

Project Management Institute.

AdvanceOnline Solutions Online Institute

Certificate of Completion

MD Rahman

has met the online course completion requirements for

OSHA 30-Hour Construction Safety

This student has completed the formal instruction for the 30-Hour Construction Outreach Program. Topics covered in this program were Introduction to OSHA, Managing Safety and Health, Struck-by and Caught-In or Between Hazards, Personal Protective Equipment, Hearing Conservation, Respiratory Protection, Lead and Crystalline Silica, Asbestos, GHS Hazard Communication, Electrical Safety, Hand and Power Tools, Fall Protection, Ladder Safety, Excavations, Scaffolds, Crane Safety, Heavy Equipment, Forklift Safety, Materials Handling, Permit-Required Confined Spaces, Fire Safety, Welding and Cutting, Concrete and Masonry, Steel Erection, and Ergonomics.

As an OSHA Outreach Training Program trainer, I affirm that I have conducted this OSHA Outreach Training Program training class in accordance with OSHA Outreach Training Program requirements. I will document this class to my OSHA Authorizing Training Organization. Upon successful review of my documentation, I will provide each student their course completion card within 90 calendar days of the end of the class. — Rick Gleason

Instructor Rick Gleason
Course ID A0310
Certificate ID 15608_1672064

Date 3/22/2020 7:42:00 AM
Time Online 47:11:32
AdvanceOnline Solutions, Inc.
1811 Bering Drive, Suite 430
Houston, Texas 77057
www.advanceonline.com
(713) 621-1100

AdvanceOnline SOLUTIONS

C 2: RESOURCES AND APPROACHES

Resources :

Safa consists of full of adequate resources for this project. In this project, most of work will be done the skilled subcontractor, who are working on this type of project for their living. The resource subdivisions are many based on different management organizations. It is our understanding in this project four (4) type of resources is significant. 1) Human resources 2) Material resources 3) Equipment resources 4) Financial resources/capacity.

1) Human resources: Safa Construction is full of capable and skilled labor firms. Two Professional Engineers will consciously assist the workers, guide them, and inspect their work. Safa has also a highly skilled project manager/ superintend who will coordinate with workers for their work and safety. See the list of major subcontractors for subcontractor information.
2) Material resources: Safa Construction will purchase all the materials as specified in the plan.
3) Equipment resources: Safa mostly rented the equipment from commercial equipment rental places. Safa has commercial accounts with equipment rental places.
4) Financial resources/capacity:

   1) Currently the SAFA construction has a working capital of 8.0 M dollars.
   2) SAFA construction is a comparatively new company. However, in this short amount of time, we completed eight (10) public projects. Public Job: Sesame Street culvert replacement at City of Opa-Locka (finished in November 2024). The net project cost for all of the projects is 1.2 million dollars. Private job: Six (6)single-family homes (finished in November 2023). The net project cost for all of the projects is 1.7 million dollars. This is a proven record of financial stability and the company's flourishing.

Approaches:

1) **Phase I – Install the Drainage treatment system**
2) **Phase II – Connect the 3” FM with existing 16” FM.**
3) **Phase III – Clean the project area.**
4) **Phase IV – Build all underground utilities and then the roadway.**
5) **Phase IV – Construct the median opening at NW 32 NW and NW 127th Street.**

C3: Reference for projects:

Project: 1

Project Title, Location, and Brief Description of Work Performed
Sesame Street Culvert Replacement - 2024
This project's scope is to replace the existing triple barrel (66 inch) pipe with new 66 inch pipe.
Sesame Street culvert in between NW 135th Street and Atlantic Avenue
Opa-locka, FL 33054

Contractor or Sub-Contractor : Contractor
Contract Amount and Date of Contract : 1,200,000.00 , February 2024
Date Complete : November 2024
Project Manager or Superintendent : MD Shahinur Rahman, PE
Required Completion Date : Project already completed

Name, Address, Email address and Telephone Number of the Owner
City of Opa-Locka
Contact Person :
Carlos Gonzalez
CIP Project Manager, City of Opa-locka
Office: 305-953-2868 Ext 1451
Cellular: 305-986-3586
Email: cgonzalez@opalockafl.gov

Capital Improvements Program
780 Fisherman Street, 4th Floor
Opa-locka, FL 33054

Designing Architect/Engineer and Address:
Engineer :
300 Engineering Group, LLC
2222 Ponce DE Leon Blvd Suite 300
Coral Gables, FL 33134

Project: 2

Project Title, Location, and Brief Description of Work Performed
Fence Upgrade Project - 2022
This project's scope is to replace the existing chain link fence with an eight-foot (8’) wrought-iron picket fence.
Sherbondy park
380 Bahman Ave, Opa-locka, FL 33054

Contractor or Sub-Contractor : Contractor
Contract Amount and Date of Contract : 214,500 , July 2022
Date Complete : December 2022
Project Manager or Superintendent : MD Shahinur Rahman, PE
Required Completion Date : Project already completed

Name, Address, Email address and Telephone Number of the Owner
City of Opa-Locka
Contact Person :
Carlos Gonzalez
CIP Project Manager, City of Opa-locka
Office: 305-953-2868 Ext 1451
Cellular: 305-986-3586
Email: cgonzalez@opalockafl.gov

Capital Improvements Program
780 Fisherman Street, 4th Floor
Opa-locka, FL 33054

Designing Architect/Engineer and Address:
Architect
2Plus Architect
260 Andalusia Ave, Coral Gables, FL 33134
Engineer :
SSN Enginering LLC
13899 Biscayne Blvd, North Miami Beach, FL 33181

Project: 3

Project Title, Location, and Brief Description of Work Performed
Fence Upgrade Project - 2023
This project's scope is to replace the existing chain link fence with an eight-foot (8’) wrought-iron picket fence.
Ingram Park
2100 Burlington St, Opa-locka, FL 33054

Contractor or Sub-Contractor : Contractor
Contract Amount and Date of Contract : 158,140 , January 2023
Date Complete : September 2023
Project Manager or Superintendent : MD Shahinur Rahman, PE
Required Completion Date : Project already completed

Name, Address, Email address and Telephone Number of the Owner
City of Opa-Locka
Contact Person :
Carlos Gonzalez
CIP Project Manager, City of Opa-locka
Office: 305-953-2868 Ext 1451
Cellular: 305-986-3586
Email: cgonzalez@opalockafl.gov

Capital Improvements Program
780 Fisherman Street, 4th Floor
Opa-locka, FL 33054

Designing Architect/Engineer and Address:
Architect
2Plus Architect
260 Andalusia Ave, Coral Gables, FL 33134
Engineer :
SSN Engineering LLC
13899 Biscayne Blvd, North Miami Beach, FL 33181

Project: 4

Project Title, Location, and Brief Description of Work Performed
Public Works Canopy Project
City of Lauderdale Lakes, FL
4300 N.W. 36th Street
Lauderdale Lakes, FL, 33319

Contractor or Sub-Contractor : Contractor
Contract Amount and Date of Contract : 100,000 , June 2023
Date Complete : October 2022
Project Manager or Superintendent : MD Shahinur Rahman, PE
Required Completion Date : Project already completed
Name, Address, Email address and Telephone Number of the Owner
City of Lauderdale Lakes, FL

Contact Person :
Maqsood M Nasir, P.E. Director, Engineering Services & Construction Management
City of Lauderdale Lakes,
4300 NW 36th Street,
Lauderdale Lakes, FL 33319,
V: 954-535-2712

Designing Architect/Engineer and Address:
Engineer :

City of Lauderdale Lakes, FL
4300 N.W. 36th Street
Lauderdale Lakes, FL, 33319

Project: 5

Project Title and Location :

Project 1: Single Family Residential Home, 921 Lake Avenue, Lehigh Acres, Fl 33972 (STRAP:21-44-27-04-00016.0230)

Project 2: Single Family Residential Home,1515 East 9th Street, Lehigh Acres, Fl 33972 (STRAP:22-44-27-14-00046.0090)

Project 3: Single Family Residential Home,1218 Mckinley Avenue, Lehigh Acres, Fl 33972 (STRAP: 16-44-27-01-00002.0050)

Project 4: Single Family Residential Home,813 Clayton, Lehigh Acres, Fl 33972 (STRAP-21-44-27-01-00002.0190)

Project 5: Single Family Residential Home,815 Clayton, Lehigh Acres, Fl 33972 (STRAP-21-44-27-01-00002.0200)

Project 6: Single Family Residential Home,816 Maple Avenue, Lehigh Acres, Fl 33972 (STRAP-21-44-27-03-00011.0040)

Contractor or Sub-Contractor : Contractor
Contract Amount and Date of Contract : 1.2 Millon, March 2022 ($200,000 for each house)
Percent Complete : 98%
Project Manager or Superintendent : MD Shahinur Rahman, PE
Required Completion Date : October, 2023

Name, Address and Telephone Number of Owner :
SARAH REAL ESTATE INVESTMENTS
6073 NW 167TH ST #C2
HIALEAH FL 33015
Owner of the organization:
Aniss Naanaa
(305) 303-3501
sarahtrading01@gmail.com

Designing Engineer and Address
LIS Engineering, LLC
21430 Palm Beach Blvd, Alva, FL 33920
(239) 693-9244

Construction Activity (Pictures)

Headwall Construction

Formwork / Rebar (Aug. 9 – 14)



Headwall Formwork



Headwall Formwork



Headwall Rebar



Headwall Rebar Installation

Construction Activity (Pictures)

Headwall Construction

Formwork / Rebar (Aug. 15 – 21)





Headwall Rebar Installation





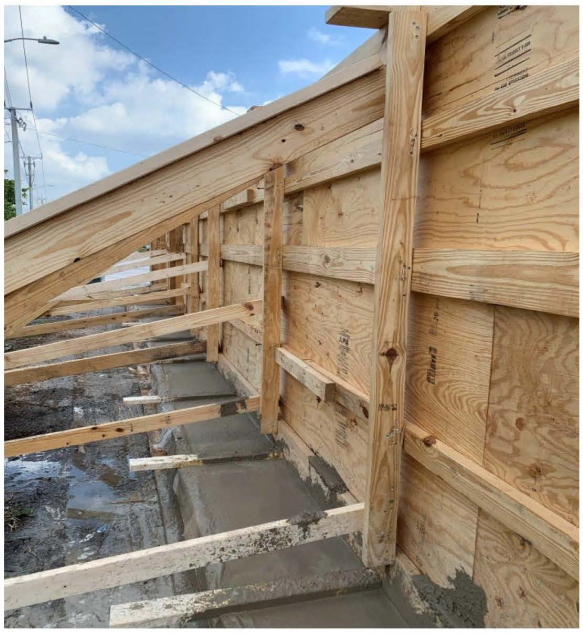
Headwall Formwork

Construction Activity (Pictures)

Headwall Construction

Cast-In-Place (Aug. 21 – 28)





Headwall Cast-In-Place Concrete





Headwall Cast-In-Place Concrete

Construction Activity (Pictures)

Demolition / Headwall Installation (West)

(Sep. 3 – 10)





West Side Demolition for Headwall Installation





Temporary Sheet Pile Installation

Construction Activity (Pictures)

Demolition / Headwall Installation (West)

(Sep. 3 –10)





West Headwall Installation



West Headwall Installation

Construction Activity (Pictures)

Demolition / Headwall Installation (East)

(Sep. 11 - 17)



East Side Demolition
Found: 2" Watermain (Abandoned) & 6" Watermain



East Side Demolition



East Side Demolition



6" Water Main Support

Construction Activity (Pictures)

Demolition / Headwall Installation (East)

(Sep. 11 - 17)





East Headwall Installation





Center Demolition

Construction Activity (Pictures)

Culverts Installation / Backfilling

(Sep. 19 - 23)



Culverts Installation



Culvert / Headwall Waterproofing



Culverts Backfilling



Culverts Backfilling

Construction Activity (Pictures)

Rebar Installation / Concrete Slab

(Oct. 1 - 18)



Concrete Slab - Rebar Installation



Concrete Slab / Barrier Wall - Rebar Installation



Concrete Slab – Concrete Pouring

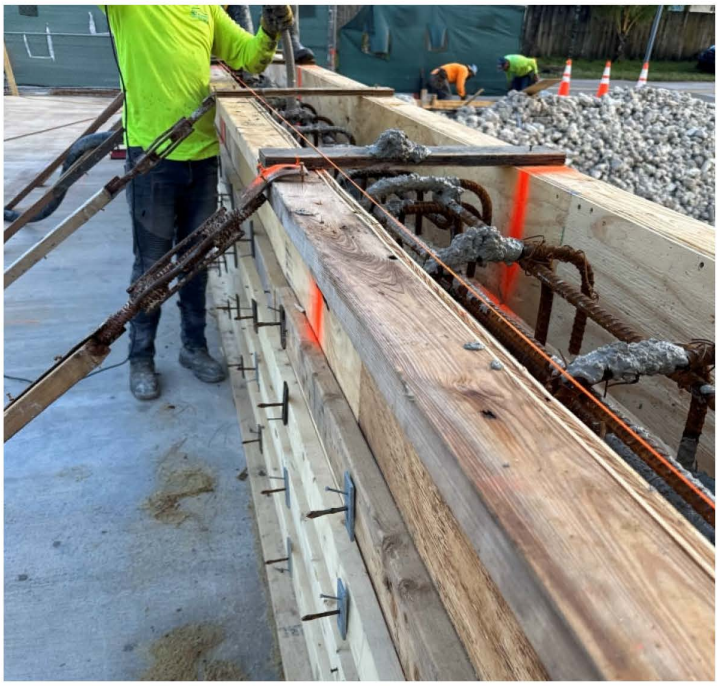


Concrete Slab - Finishing

Construction Activity (Pictures)

Concrete Barrier Wall

(Oct. 21 - 25)



Concrete Barrier Wall – Concrete Pouring



Concrete Barrier Wall – Concrete Pouring



Concrete Barrier Wall – Concrete Pouring



Concrete Barrier Walls

Construction Activity (Pictures)

Concrete Sidewalk

(Oct. 21 - 25)



Sidewalk - Formwork



Sidewalk - Formwork



Sidewalk - Finishing



Sidewalk - Finishing

Construction Activity (Pictures)

Canal Rip Rap / Culvert Sealing

(Oct. 26 - 29)



Canal Rip Rap / Culvert Sealing



Canal Rip Rap

Construction Activity (Pictures)



Milling



Resufacing



Soding



Resufacing

Construction Activity (Pictures)



Handrail



Guard Railing



C 4: Schedule

1) **Install the Drainage treatment system …… 9-week**
2) **Connect the 3” FM with existing 16” FM…… 1 week**
3) **Clean the project area…….……..…….2 week**
4) **Build all underground utilities and then the roadway....32 week**
5) **Construct the median opening at NW 32 NW and NW 127th Street……..……4 week**

Total 48 weeks or 11 months

Note: The Schudel compression technique (a Combination of schedule crashing and fast-tracking) has been applied to the process faster.

C 5: Price Proposal

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

TO THE COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA

Ladies and Gentlemen:

The undersigned bidder proposes to furnish all labor, tools, material and supplies, and to sustain all the expense incurred in doing the work set forth below that may be awarded the undersigned by the City of Opa-Locka, Florida, through its proper officers, and to do the same strictly in accordance with the plans and contract documents on file in the Office of the City Engineer of Opa-Locka, which are referred to below and made a part hereof, at the following combination of lump sum prices:

Item No.	Estimated Quantity	Description	Total
1.	Lump Sum (Divided into 2 or 4 payments See Measurement and Payment for Conditions)	For performing preparatory work and operations in mobilizing for beginning the work of the Project, but excluding materials and permit costs, both of which are paid under other payments items, the lump sum of 20,000.00 Dollars and 0 0 Cents	$ 20,000.00
Water System Improvements			
2.	6 each	For furnishing and constructing Fire Hydrant Assemblies (FHs) for water main, per Standard Detail WS 4.50, at the locations shown on the Plans, complete, the price each of 10,000.00 Dollars and _____ Cents	$ 60,000.00

Item No.	Estimated Quantity	Description	Total
3.	2 each	For demolishing damaged fire hydrant assemblies, the price per each of 4,000.00 Dollars and 0.0 Cents	$ 8,000.00
4.	38 each	For adjusting rim elevation of existing water meters to meet proposed grade and replace lid, as show on the Plans, the price each of, 2,000.00 Dollars and 0.00 Cents	$ 76,000.00
5.	8 each	For adjusting rim elevation of existing water valves to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, 500.00 Dollars and 0.00 Cents	$ 4,000.00
6.	6 each	For adjusting rim elevation of existing water ARV's to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, 500.00 Dollars and 0.00 Cents	$ 3,000.00
Sewer System Improvements			

Item No.	Estimated Quantity	Description	Total
7.	150 LF	For selling and delivering to the City 3" HDPE pipe and fittings for sewer force main, the price per lineal foot of 20.00 Dollars and 0.0 Cents	$ 3,000.00
8.	150 LF	For installing 3" HDPE pipe and fittings for sewer force main along Cairo Lane and across NW 135th Street, the price per lineal foot of 500.00 Dollars and 0.00 Cents	$ 75,000.00
9.	Lump Sum	For selling and delivering to the City all valves necessary and tapping sleeve for the hot tapping of the existing 16" CIP FM at 135th street, as shown on the Plans, complete, the lump sum of 5,000.00 Dollars and 0.00 Cents	$ 5,000.00
10.	Lump Sum	For hot tapping the existing 16-inch cast iron force main at: NW 135th Street (STA 43+88±) including installing all valves and tapping sleeve necessary for connection, and, as shown on the Plans, complete, the lump sum of 10,000.00 Dollars and 0.0 Cents.	$ 10,000.00

Item No.	Estimated Quantity	Description	Total
11.	670 LF	For selling and delivering to the City 2" HDPE pipe and fittings for sewer force service connections, the price per lineal foot of 30.00 Dollars and 0.00 Cents	$ 20,100.00
12.	670 LF	For installing City 2" HDPE pipe and fittings for sewer service connections along Cairo Lane, the price per lineal foot of 40.00 Dollars and 0.0 Cents	$ 26,800.00
13.	18 each	For selling and delivering to the City 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections, complete, the price each of 600.00 Dollars and 0.00 Cents.	$ 10,800.00
14.	18 each	For installing 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections along Cairo Lane, complete, the price each of 600.00 Dollars and 0.0 Cents.	$ 10,800.00
15.	18 each	For selling and delivering to the City 2-inch HDPE Plugs for sewer force main service connections, complete, the price each of 100.00 Dollars and 0.0 Cents.	$ 1,800.00

Item No.	Estimated Quantity	Description	Total
16.	18 each	For installing 2-inch HDPE Plugs for sewer force main service connections along Cairo Lane, complete, the price each of 300.00 Dollars and 0.0 Cents.	$ 5,400.00
17.	1 each	For selling and delivering to the City 2-inch ball valves with valve boxes for sewer force main, complete, the price each of 100.00 Dollars and 0.00 Cents.	$ 100.00
18.	1 each	For installing 2-inch ball valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of 200.00 Dollars and 0.0 Cents.	$ 200.00
19.	1 each	For selling and delivering to the City 2-inch flushing valve outlets with valve boxes for sewer force main, complete, the price each of 100.00 Dollars and 0.00 Cents.	$ 100.00
20.	1 each	For installing 2-inch flushing valve outlets with valve boxes for sewer force main along Cairo Lane, complete, the price each of 200.00 Dollars and 0.00 Cents.	$ 200.00

Item No.	Estimated Quantity	Description	Total
21.	1 each	For furnishing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of 1,800.00 Dollars and 0.00 Cents	$ 1,800.00
22.	1 each	For constructing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of 2,000.00 Dollars and 0.00 Cents	$ 2,000.00
23.	1 each	For selling and delivering to the City 2-inch mechanical joint plug valves with valve boxes for sewer force main, complete, the price each of 200.00 Dollars and 0.0 Cents.	$ 200.00
24.	1 each	For installing 2-inch mechanical joint plug valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of 400.00 Dollars and 0.0 Cents.	$ 400.00
25.	2 each	For adjusting rim elevation of existing sewer valves to meet proposed grade, and replace cover, along Cairo Lane, as show on the Plans, the price each of, 500.00 Dollars and 0.0 Cents	$ 1,000.00

Item No.	Estimated Quantity	Description	Total
26.	3 each	For adjusting rim elevation of existing sewer ARV's to meet proposed grade and replace cover, as show on the Plans, the price each of, 500.00 Dollars and 0.0 Cents	$ 1,500.00
		Drainage System Improvements	
27.	1595 LF	For selling and delivering to the City 24" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of 50.00 $/LF	$ 159,500.00
28.	1595 LF	For installing City 24" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of 100 Dollars and 0.0 Cents	$ 159,500.00
29.	395 LF	For selling and delivering to the City 18" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of 45.00 $/LF	$ 17,775.00
30.	395 LF	For installing City 18" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of 100 Dollars and 0.0 Cents	$ 39,500.00

Item No.	Estimated Quantity	Description	Total
31.	105 LF	For selling and delivering to the City 15" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of 45 Dollars and 0.0 Cents	$ 4,725.00
32.	105 LF	For installing City 15" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane, the price per lineal foot of 90 Dollars and 0.00 Cents	$ 9,450.00
33.	Lump Sum	For furnishing and installing two (2) StormSafe Vaults model SSV40-2-000 by FABCO for the stormwater treatment system at Cairo Lane, the lump sum price of 120,000.00 Dollars and 0.0 Cents	$ 240,000.00
34.	33 EA	For furnishing and installing StormSack Plus model PSS1626-1E-000 by FABCO for the stormwater treatment system at Cairo Lane, the unit price of 4,000.00 Dollars and 0.00 Cents	$ 132,000.00
35.	Lump Sum	For demolishing and disposing existing NSBB Model #NSBB-8-14 drainage treatment structure, the lump sum price of 40,000.00 Dollars and 0.00 Cents	$ 40,000.00

Item No.	Estimated Quantity	Description	Total
36.	12 each	For selling and delivering to the City precast stormwater structures along Cairo Lane and NW 127th Street, including rims and covers, for the installation of drainage system, the unit price of 5,000.00 Dollars and 0.00 Cents	$ 60,000.00
37.	12 each	For installing precast stormwater structures, including rims and covers along Cairo Lane and NW 127th Street, for the installation of drainage system, the unit price of 4,000.00 Dollars and 0.00 Cents	$ 48,000.00
38.	3 each	For repairing damaged stormwater catch basins structures S-2 and S-3 along Cairo Lane and S-27 along NW 127th Street, the unit price of 5,000.00 Dollars and 0.00 Cents	$ 15,000.00
39.	28 each	For adjusting rim elevation of existing stormwater catch basins to meet proposed grade and replace cover, as show on the Plans, the price each of, 2,000.00 Dollars and 0.00 Cents	$ 56,000.00
40.	6 CY	For furnishing and installing precast reinforced concrete headwalls for stormwater outfall, per FDOT index No. 430-030, as indicated in the Plans, the price per cubic yard of	$ 24,000.00

Item No.	Estimated Quantity	Description	Total
41.	115 TON	For furnishing and installing Rubble (Broken Stone) at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of 100 Dollars and 0.00 Cents.	$ 11,500.00
42.	5 CY	For furnishing and installing sand-cement bags at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of 1,000.00 Dollars and 0.0 Cents.	$ 5,000.00

Item No.	Estimated Quantity	Description	Total
43.	1 EA	For furnishing and installing manatee grate for 36" pipe for stormwater outfall, as indicated in the Plans, the unit price of 5,000.00 Dollars and 0.00 Cents	$ 5,000.00
44.	1 EA	For furnishing and installing 36-inch in-line check valves with valve boxes for stormwater outfall, as indicated in Plans, the unit price of 20,000.00 Dollars and 0.0 Cents	$ 20,000.00

Item No.	Estimated Quantity	Description	Total
45.	Lump Sum (Dedicated Allowance)	For dewatering, transporting to, and safe disposal of, potentially contaminated groundwater, as required for underground pipe installation, the lump sum price of 300,0000.00 Dollars and 0.0 Cents	$ 300,000
		Roadway Reconstruction	
46.	740 CY	For the excavating of existing backfill material along Cairo Lane and NW 127th Street, for the grading for roadway improvements, the price per cubic yard of 80.00 Dollars and 0.00 Cents.	$ 59,200.00

Item No.	Estimated Quantity	Description	Total
47.	765 CY	For furnishing and placing suitable Backfill required for the grading for roadway reconstruction along Cairo Lane, NW 127th Street, the price per cubic yard of 60.00 Dollars and 0.00 Cents.	$ 45,900.00
48.	7550 SY	For milling (nominal 2 inch thick), surface course for permanent paving repairs along Cairo Lane, the price per square yard of 7.00 Dollars and 0.00 Cents.	$ 52,850.00
49.	1300 SY	For selling and delivering to the City Concrete for the installation of 8-inch thick Concrete Pavement per FDOT index No. 350, the price square yard of 90.00 Dollars and 0.00 Cents.	$ 117,000.00
50.	1300 CY	For constructing 8-inch thick Concrete Pavement per FDOT index No. 350, as indicated in the Plans, the price per price square yard of 250.00 Dollars and 0.00 Cents.	$ 325,000.00

Item No.	Estimated Quantity	Description	Total
51.	12150 SY	For furnishing and constructing asphalt base, B-12.5, min. 3.5-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of 40.00 Dollars and 0.0 Cents	$ 486,000.00
52.	12150 SY	For furnishing and constructing superpave asphaltic concrete, SP-12.5, PG-76-22 min. 2-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of 30.00 Dollars and 0.00 Cents	$ 364,500.00
53.	12150 SY	For furnishing and constructing friction course, FC-12.5, PG-76-21, min. 1-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of 25.00 Dollars and 0.00 Cents	$ 303,750.00
54.	1830 SY	For milling (nominal 1 inch thick), surface course for permanent paving repairs along NW 32nd Ave, the price per square yard of 4.00 Dollars and 0.0 Cents.	$ 7,320.00

Item No.	Estimated Quantity	Description	Total
55.	1830 SY	For constructing for Type "V" permanent paving repairs (minimum 1 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of 40.00 Dollars and 0.00 Cents.	$ 73,200.00
56.	500 SY	For constructing for Type "V" permanent paving installation (minimum 2 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of 60.00 Dollars and 0.00 Cents.	$ 30,000.00
57.	600 SY	For milling (nominal 1.5 inch thick), surface course for permanent paving repairs along NW 135th Street, the price per square yard of 6.00 Dollars and 0.00 Cents.	$ 3,600.00
58.	600 SY	For constructing for Type "V" permanent paving repairs along NW 135th Street Ave (Min 1.5-inch overlay), as per details provided in plans, the price per square yard of 8.00 Dollars and 0.00 Cents.	$ 4,800.00

Item No.	Estimated Quantity	Description	Total
59.	740 SF	For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, the price per square foot of 20.00 Dollars and 0.00 Cents.	$ 14,800.00
60.	1635 SF	For furnishing and constructing 6-inch concrete driveway approach to match existing, the price per square foot of 25.00 Dollars and 0.00 Cents.	$ 40,875.00
61.	360 LF	For furnishing and constructing concrete curb and gutter restoration to match existing along the intersection between NW 127th Street and NW 32nd Avenue, the price per linear foot of 40.00 Dollars and 0.00 Cents.	$ 14,400.00
62.	8995 LF	For furnishing and constructing concrete valley gutter along Cairo Lane and NW 127th Street, the price per linear foot of 30.00 Dollars and 0.00 Cents.	$ 269,850.00
63.	30 LF	For furnishing and installing general guardrail at the outfall along Cairo Lane, the price per linear foot of 300.00 Dollars and 0.00 Cents.	$ 9,000.00

Item No.	Estimated Quantity	Description	Total
64.	Lump Sum	For furnishing and installing pavement markings, including signage and raised pavement markers, as indicated in plans, the lump sum price of 30,000.00 Dollars and 0.00 Cents.	$ 30,000.00
65.	Lump Sum	For demolishing and disposing existing median curb at the intersection between NW 127th Street and NW 32nd Ave, as indicated in plans, the price per lump sum of 10,000.00 Dollars and 0.0 Cents.	$ 10,000.00
66.	14 EA	For removing and disposing existing trees located at the median curb at the intersection between NW 127th Street and NW 32nd Ave, the unit price of 500.00 Dollars and 0.00 Cents.	$ 7,000.00
67.	Lump Sum	For providing full Traffic Control during construction along Cairo Lane, Alexandria Drive and NW 127th Street Maintenance of Traffic, the lump sum price of 30,000.00 Dollars and 0.00 Cents.	$ 30,000.00
Dedicated Allowances			
68.	7 each (Dedicated Allowance)	For repairing damaged fire hydrants assemblies, per Standard Detail WS 4.50, the price per each of _____ Dollars and _____ Cents	$ 24,500

Item No.	Estimated Quantity	Description	Total
69.	7 each (Dedicated Allowance)	For demolishing and replacing damaged fire hydrant assemblies, per Standard Detail WS 4.50, the price per each of $6,750 Dollars and 0 Cents	$ 47,250
70.	7 each (Dedicated Allowance)	For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, the price per each of $1,100 Dollars and 0 Cents	$ 7,700
71.	38 each (Dedicated Allowance)	For repairing damaged water meters, including boxes, along Cairo Lane and NW 127th Street as per Standard Details shown in Plans, the price each of, $1,000 Dollars and 0 Cents	$ 38,000
72.	10 each (Dedicated Allowance)	For repairing damaged stormwater catch basins structures, the unit price of $5,500 Dollars and 0 Cents	$ 55,000
73.	5300 SF (Dedicated Allowance)	For sheeting and shoring ordered left in place by the Engineer for sewer and drainage improvements, the price per square foot of $20 Dollars and 0 Cents.	$ 106,000

Item No.	Estimated Quantity	Description	Total
74.	1500 CY (Dedicated Allowance)	For removal, transport and legal disposal of above-ground debris, including tipping fees, the price per cubic yard of $185 Dollars and 0 Cents.	$ 277,500
75.	2000 SY (Dedicated Allowance)	For restoring sodded area (harmonization), the price per square yard of $19 Dollars and 0 Cents.	$ 38,000
76.	**Sub-Total – Bid Items 1 through 75**	$ 4,507,395.00	
77.	Dedicated Allowance	For providing uniformed, off-duty policemen for the purpose of maintenance of traffic, the aggregate sum of 1,000.00 Dollars and 0.00 Cents.	$ 1,000.00
78.	Dedicated Allowance	For all cost of required permit fees including Soil Management Plan and Health & Safety Plan, impact fees, if required by the Engineer, the sum of 5% of the Subtotal, Item 76 (0.05) x (Subtotal, Item 76) 225,369 Dollars and 75 Cents.	$ 225,369.75

Item No.	Estimated Quantity	Description	Total
79.	Contingency Allowance	For unforeseen conditions, for minor construction changes and for quantity adjustments, if ordered by the Engineer, the sum of 10% of the Subtotal, Item 76 (.10) x (Subtotal, Item 76) 450,739 Dollars and 50 Cents.	$ 450,739.50
80.	Contingency Allowance	For unforeseen plan revisions due to ongoing permitting efforts if required by permitting approvals, only to be used if required and approved by the City, the sum of 5% of the Subtotal, Item 76 (.05) x (Subtotal, Item 76) 225,369 Dollars and 75 Cents.	$ 225,369.75
81.	**TOTAL BID – (Sum of Bid Item Nos. 76, 77, 78, 79, and 80,)**	$ 5,409,874.00	

Note: For a detailed description of each Quotation Item, refer to Section 01025 of the Specifications entitled "Measurement and Payment.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

The City of Opa-Locka reserves the right to waive any informality in any bid and to reject any or all bids.

TOTAL BASE BID PRICE FOR PROPOSAL (ITEMS 1 THROUGH 81): $ 5,409,874.00
(FIGURES)

Five million four hundred nine thousand eight hundred seventy four Dollars and

zero Cents

AMOUNTS SHALL BE SHOWN ON BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BASE BID.

Bidder acknowledges that included in the various items of the bid proposal and in the TOTAL BASE BID PRICE are costs for complying with the Florida Trench Safety Act, F.S. 553.60 et. seq. The Bidder by signing and submitting the Trench Safety Act Compliance Statement is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards.

Contract award shall be based upon the total base bid price, as identified above, by the lowest responsive, responsible bidder.

Safa Construction, LLC
FIRM NAME (PRINT)

BIDDER'S SIGNATURE

CITY OF OPA-LOCKA

ITB NO: 24-1114200

INVITATION TO BID(ITB)
Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project

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ITB NO: 24-1114200

CAIRO LN & NW 127TH STREET DRAINAGE, UTILITIES AND ROADWAY IMPROVEMENTS PROJECT

Sealed Proposals for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project will be received by the City of Opa-locka at the Office of the City Clerk, 780 Fisherman St, 4th Floor, Opa-locka, Florida 33054, by 2:00 p.m., Thursday, November 14, 2024 (ET). Any ITB Package received after the designated closing time will be returned unopened. The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk

780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

An original and six (6) copies for a total of seven (7) plus 1 copy of the Proposal package on USB Flash Drive in PDF format shall be submitted in sealed envelopes/packages addressed to the City Clerk, City of Opa-locka, Florida, and marked ITB for Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project.

Proposers desiring information for use in preparing proposals may obtain a set of such documents by visiting the City's website at www.opalockafl.gov or www.demandstar.com.

The City reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The City further reserves the right to award the contract to that proposer whose proposal best complies with the **ITB 24-1114200** requirements. Proposers may not withdraw their proposal for a period of ninety (90) days from the date set for the opening thereof.

City Clerk
Joanna Flores, CMC

PART I

PROPOSAL GUIDELINES

1-1. Introduction: The City of Opa-locka is requesting proposals from qualified professional firms to provide Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project with the terms, conditions, and specifications contained in this Invitation to Bid (ITB).

1-2. Proposal Submission and Withdrawal: The City of Opa-locka will be accepting proposals by mail, however it is your responsibility to submit your proposal by the due date. In addition, proposals may be submitted via www.demandstar.com (e-bid). The City must receive all proposals by 2:00 pm (ET) on 11/14/2024. The address to submit sealed proposals is listed below:

CITY OF OPA-LOCKA
Office of the City Clerk
780 Fisherman Street, 4th Floor
Opa-locka, Florida 33054

To facilitate processing, please clearly mark the outside of the proposal package as follows: ITB 24-1114200 – Cairo Ln & NW 127th Street Drainage, Utilities and Roadway Improvements Project. This package shall also include the Proposer's return address.

Proposers may withdraw their proposals by notifying the City in writing at any time prior to the deadline for proposal submittal. After the deadline, the proposal will constitute an irrevocable offer, for a period of 90 days. Once opened, proposals become a record of the CITY and will not be returned to the Proposer.

The City cautions proposers to ensure actual delivery of mailed or hand-delivered proposals directly to the City Clerk's Office at 780 Fisherman Street, 4th Floor, Opa-locka, Florida 33054 prior to the deadline set for receiving proposals. Telephone confirmation of timely receipt of the proposal may be made by calling (305) 688-4611, Option 1, before the proposal closing time. Any proposal received after the established deadline will not be considered and will be returned unopened to the Proposer(s).

1-3. Number of Copies: Proposers shall submit an original and six (6) copies (a total of 7) plus one copy on USB Flash Drive in PDF format of the proposal in a sealed, opaque package marked as noted above. The Proposer will be responsible for timely delivery, whether by personal delivery, US Mail, or any other mode of delivery.

1-4. Development Costs: Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation of a response to this Request for Proposal. Proposers should prepare their proposals simply and economically, providing a straightforward and concise description of the Proposer's ability to meet the requirements of the ITB.

1-5. Inquiries: The City Clerk will receive written requests for clarification concerning the meaning or interpretations of the ITB until eight (8) days prior to the submittal date. City personnel are authorized only to direct the attention of prospective Proposers to various portions of the ITB so that they may read and interpret such for themselves. No employee other than the City's Purchasing

Officer is authorized to interpret any portion of this ITB or give information as to the requirements of the ITB in addition to what is contained in the written ITB document.

1-6. Addenda: The City may record its response to inquiries and any supplemental instructions in the form of written addenda. The City may post addenda on the City's website up to five (5) calendar days before the date fixed for receiving the proposals. Proposers shall contact the City to ascertain whether any addenda have been issued. Failure to do so could result in an unresponsive proposal. Any oral explanation given before the ITB opening will not be binding.

All Proposers are expected to carefully examine the proposal documents. Any ambiguities or inconsistencies should be brought to the attention of the City's Purchasing Officer through written communication prior to the opening of the proposals.

1-7. Contract Awards: The City anticipates entering into an Agreement with the Proposer who submits the proposal judged by the City to be most advantageous.

The Proposer understands that this ITB does not constitute an offer or an Agreement with the Proposer. An offer or Agreement shall not be deemed to exist and is not binding until proposals are reviewed and evaluated by appointed staff, the best proposal has been identified, approved by the appropriate level of authority within the City and executed by all parties. The City reserves the right to reject all proposals, to abandon the project and/or to solicit and re- advertise for other proposals.

1-8. Contractual Agreement: This ITB and Proposer proposal shall be included and incorporated in the final award. The order of contractual precedence will be the Contract or Agreement document, original Terms and Conditions, and Proposer response. Any and all legal action necessary to enforce the award will be held in Miami-Dade County and the contractual obligations will be interpreted according to the laws of Florida. Any additional contract or agreement requested for consideration by the Proposer must be attached and enclosed as part of the proposal.

The successful proposer will be required to enter into an agreement with the City of Opa-Locka in a contract form substantially similar to the one attached hereto

1-9. Selection Process: The proposals will be evaluated and assigned points. The Proposer with the highest number of points will be ranked first; however, nothing herein will prevent the City from assigning work to any firm deemed responsive and responsible.

1-10. Public Records: Upon award recommendation or ten (10) days after opening, whichever occurs first, proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119 Florida Statutes. Proposers must invoke the exemptions to disclosure provided by law in the response to the ITB and must identify the data or other materials to be protected and must state the reasons why such exclusion from public disclosure is necessary. Document files may be examined during normal working hours.

1-11. News Releases: The Proposer shall obtain the prior approval of the City Manager's Office for all news releases or other publicity pertaining to this ITB or the service, study, or project to which it relates.
1-12. Insurance: The awarded Proposer(s) shall maintain insurance coverage reflecting at least the minimum amounts and conditions. In the event the Proposer is a governmental entity or self-insured organization, different insurance requirements may apply. Misrepresentation of any material fact, whether intentional or not, regarding the Proposer's insurance coverage, policies or capabilities may be grounds for rejection of the proposal and rescission of any ensuing Agreement.

1-13. Licenses: Proposers, both corporate and individual, must be fully licensed and certified in the State of Florida at the time of ITB submittal. The proposal of any Proposer who is not fully licensed and certified shall be rejected.

1-14. Public Entity Crimes: Award will not be made to any person or affiliate identified on the Department of Management Services' "Convicted Vendor List". This list is defined as consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. No public entity shall award any contract to or transact any business in excess of the threshold amount provided in Section 287.017 Florida Statutes for Category Two (currently $35,000) with any person or affiliated on the "Convicted Vendor List" for a period of thirty-six (36) months from the date that person or affiliate was placed on the "Convicted Vendor List" unless that person or affiliate has been removed from the list. By signing and submitting the ITB proposal forms, Proposer attests that they have not been placed on the "Convicted Vendor List".

1-15. Code Of Ethics: If any Proposer violates or is a party to a violation of the code of ethics of the City of Opa-locka, Miami-Dade County or the State of Florida with respect to this proposal, such Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and may be further disqualified from submitting any future proposals for work, goods, or services for the City of Opa-locka.

1-16. Drug-Free Workplace: Preference shall be given to Proposers with Drug-Free Workplace (DFW) programs. Whenever two or more proposals which are equal with respect to price, quality, and service are received by the City for the procurement of commodities or contractual services, a proposal received from a Proposer that completes the attached DFW form certifying that it is a DFW shall be given preference in the award process.

1-17. Permits and Taxes: The Proposer shall procure all permits, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

1-18. Protests: Protests of the plans, specifications, and other requirements of the Request for Proposal and bids must be received in writing by the City Clerk's Office at least ten (10) working days after the scheduled bid opening. A detailed explanation of the reason for the protest must be included. Protests of the award or intended award of the bid or contract must be in writing and received in the City Clerk's Office within seven (7) working days of the notice of award. A detailed explanation of the protest must be included.

1-19. Termination for Convenience: A contract may be terminated in whole or in part by the City at any time and for any reason in accordance with this clause whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be initiated by the delivery to the contractor at least five (5) working days before the effective date of a Notice of Termination specifying the extent to which performance shall be terminated and the date upon which termination becomes effective. An equitable adjustment in the contract price shall be made for the completed service, but no amount shall be allowed for anticipated profit on unperformed services.

CONE OF SILENCE

This solicitation is subject to a Cone of Silence pursuant to Section 2-320.2 of the City of Opa-Locka's Code of Ordinances.

A cone of silence shall be applicable to all city staff, the mayor and city commission and its staff, the city attorney and his/ her staff, the city clerk and his/ her staff regarding any communication relating to requests for proposal (ITB), requests for qualification (RFQ), invitations to bid (ITB), request for letters of interest (RFLI), or any other advertised solicitations for the provision of goods and services, professional services, and public works or improvements.

CALENDAR EVENTS

EVENT	**DATE/LOCATION**
Release Date	9/30/2024
Pre-Bid	NA
Written Questions Due	10/25/24 @ 5:00pm Email questions to jbergel@opalockafl.gov With Subject line "ITB No: Bid Questions"
Response to Questions	11/01/24 @ 5:00pm (ET)
Due Date/Bid Opening	11/14/24 @ 2:00 pm (ET)
Award Recommendation	TBA
Commission Approval	TBA
Post Award	TBA

TERM OF CONTRACT

The agreement shall commence upon final execution of the agreement by the City and the term will be for a one (1) year term.

PERFORMANCE SECURITY BOND

The Contractor shall provide and maintain performance security covering the faithful performance of the Contract including the corrections after completion and payment of all obligations arising under the Contract in the form of:

1. A performance bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price; and

2. A labor and materials payment bond of a company registered to conduct the business of a surety in the State of Florida, in the amount of one hundred percent (100%) of the Contract Price.

11.2.2 The performance bond and the labor and materials payment bond shall be written on a standard bond form, or on a form satisfactory to the City.
11.2.3 The Contractor shall provide the City with the required performance security before commencement of the Services or the Work."

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

TO THE COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA

Ladies and Gentlemen:

The undersigned bidder proposes to furnish all labor, tools, material and supplies, and to sustain all the expense incurred in doing the work set forth below that may be awarded the undersigned by the City of Opa-Locka, Florida, through its proper officers, and to do the same strictly in accordance with the plans and contract documents on file in the Office of the City Engineer of Opa-Locka, which are referred to below and made a part hereof, at the following combination of lump sum prices:

Item No.	Estimated Quantity	Description	Total
1.	Lump Sum (Divided into 2 or 4 payments See Measurement and Payment for Conditions)	For performing preparatory work and operations in mobilizing for beginning the work of the Project, but excluding materials and permit costs, both of which are paid under other payments items, the lump sum of _____ Dollars and _____ Cents	$_____
Water System Improvements			
2.	6 each	For furnishing and constructing Fire Hydrant Assemblies (FHs) for water main, per Standard Detail WS 4.50, at the locations shown on the Plans, complete, the price each of _____ Dollars and _____ Cents	$_____

Item No.	Estimated Quantity	Description	Total
3.	2 each	For demolishing damaged fire hydrant assemblies, the price per each of _____ Dollars and_____Cents	$_____
4.	38 each	For adjusting rim elevation of existing water meters to meet proposed grade and replace lid, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
5.	8 each	For adjusting rim elevation of existing water valves to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
6.	6 each	For adjusting rim elevation of existing water ARV's to meet proposed grade and replace cover along Cairo Lane and NW 127th Street, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Sewer System Improvements			

Item No.	Estimated Quantity	Description	Total
7.	150 LF	For selling and delivering to the City 3" HDPE pipe and fittings for sewer force main, the price per lineal foot of _____ Dollars and_____Cents	$_____
8.	150 LF	For installing 3" HDPE pipe and fittings for sewer force main along Cairo Lane and across NW 135th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
9.	Lump Sum	For selling and delivering to the City all valves necessary and tapping sleeve for the hot tapping of the existing 16" CIP FM at 135th street, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents	$_____
10.	Lump Sum	For hot tapping the existing 16-inch cast iron force main at: NW 135th Street (STA 43+88±) including installing all valves and tapping sleeve necessary for connection, and, as shown on the Plans, complete, the lump sum of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
11.	670 LF	For selling and delivering to the City 2" HDPE pipe and fittings for sewer force service connections, the price per lineal foot of _____ Dollars and_____Cents	$_____
12.	670 LF	For installing City 2" HDPE pipe and fittings for sewer service connections along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
13.	18 each	For selling and delivering to the City 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____
14.	18 each	For installing 2-inch mechanical joint ball valves with valve boxes for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
15.	18 each	For selling and delivering to the City 2-inch HDPE Plugs for sewer force main service connections, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
16.	18 each	For installing 2-inch HDPE Plugs for sewer force main service connections along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____
17.	1 each	For selling and delivering to the City 2-inch ball valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
18.	1 each	For installing 2-inch ball valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
19.	1 each	For selling and delivering to the City 2-inch flushing valve outlets with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
20.	1 each	For installing 2-inch flushing valve outlets with valve boxes for sewer force main along Cairo Lane, complete, the price each of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
21.	1 each	For furnishing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
22.	1 each	For constructing Air Release Valve Assemblies (ARVs) for sewer force mains along Cairo Lane shown on the Plans, complete, the price each of _____ Dollars and_____Cents	$_____
23.	1 each	For selling and delivering to the City 2-inch mechanical joint plug valves with valve boxes for sewer force main, complete, the price each of _____ Dollars and_____Cents.	$_____
24.	1 each	For installing 2-inch mechanical joint plug valves with valve boxes for sewer force main along Cairo Lane and Alexandria Dr, complete, the price each of _____ Dollars and_____Cents.	$_____
25.	2 each	For adjusting rim elevation of existing sewer valves to meet proposed grade, and replace cover, along Cairo Lane, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
26.	3 each	For adjusting rim elevation of existing sewer ARV's to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
Drainage System Improvements			
27.	1595 LF	For selling and delivering to the City 24" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
28.	1595 LF	For installing City 24" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____
29.	395 LF	For selling and delivering to the City 18" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of	$_____
30.	395 LF	For installing City 18" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane and NW 127th Street, the price per lineal foot of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
31.	105 LF	For selling and delivering to the City 15" HDPE corrugated pipe and fittings for stormwater system improvements, the price per lineal foot of _____ Dollars and_____Cents	$_____
32.	105 LF	For installing City 15" HDPE corrugated pipe and fittings for stormwater system improvements along Cairo Lane, the price per lineal foot of _____ Dollars and_____Cents	$_____
33.	Lump Sum	For furnishing and installing two (2) StormSafe Vaults model SSV40-2-000 by FABCO for the stormwater treatment system at Cairo Lane, the lump sum price of _____ Dollars and_____Cents	$_____
34.	33 EA	For furnishing and installing StormSack Plus model PSS1626-1E-000 by FABCO for the stormwater treatment system at Cairo Lane, the unit price of _____ Dollars and_____Cents	$_____
35.	Lump Sum	For demolishing and disposing existing NSBB Model #NSBB-8-14 drainage treatment structure, the lump sum price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
36.	12 each	For selling and delivering to the City precast stormwater structures along Cairo Lane and NW 127th Street, including rims and covers, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
37.	12 each	For installing precast stormwater structures, including rims and covers along Cairo Lane and NW 127th Street, for the installation of drainage system, the unit price of _____ Dollars and_____Cents	$_____
38.	3 each	For repairing damaged stormwater catch basins structures S-2 and S-3 along Cairo Lane and S-27 along NW 127th Street, the unit price of _____ Dollars and_____Cents	$_____
39.	28 each	For adjusting rim elevation of existing stormwater catch basins to meet proposed grade and replace cover, as show on the Plans, the price each of, _____ Dollars and_____Cents	$_____
40.	6 CY	For furnishing and installing precast reinforced concrete headwalls for stormwater outfall, per FDOT index No. 430-030, as indicated in the Plans, the price per cubic yard of	$_____

Item No.	Estimated Quantity	Description	Total
41.	115 TON	For furnishing and installing Rubble (Broken Stone) at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____
42.	5 CY	For furnishing and installing sand-cement bags at stormwater outfall embankment for the rip-rap installation as per FDOT index No. 530, the price per ton of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
43.	1 EA	For furnishing and installing manatee grate for 36" pipe for stormwater outfall, as indicated in the Plans, the unit price of _____ Dollars and_____Cents	$_____
44.	1 EA	For furnishing and installing 36-inch in-line check valves with valve boxes for stormwater outfall, as indicated in Plans, the unit price of _____ Dollars and_____Cents	$_____

Item No.	Estimated Quantity	Description	Total
45.	Lump Sum (Dedicated Allowance)	For dewatering, transporting to, and safe disposal of, potentially contaminated groundwater, as required for underground pipe installation, the lump sum price of _____ Dollars and_____Cents	$ 300,000
Roadway Reconstruction			
46.	740 CY	For the excavating of existing backfill material along Cairo Lane and NW 127th Street, for the grading for roadway improvements, the price per cubic yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
47.	765 CY	For furnishing and placing suitable Backfill required for the grading for roadway reconstruction along Cairo Lane, NW 127th Street, the price per cubic yard of _____ Dollars and_____Cents.	$_____
48.	7550 SY	For milling (nominal 2 inch thick), surface course for permanent paving repairs along Cairo Lane, the price per square yard of _____ Dollars and_____Cents.	$_____
49.	1300 SY	For selling and delivering to the City Concrete for the installation of 8-inch thick Concrete Pavement per FDOT index No. 350, the price square yard of _____ Dollars and_____Cents.	$_____
50.	1300 CY	For constructing 8-inch thick Concrete Pavement per FDOT index No. 350, as indicated in the Plans, the price per price square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
51.	12150 SY	For furnishing and constructing asphalt base, B-12.5, min. 3.5-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
52.	12150 SY	For furnishing and constructing superpave asphaltic concrete, SP-12.5, PG-76-22 min. 2-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
53.	12150 SY	For furnishing and constructing friction course, FC-12.5, PG-76-21, min. 1-inch thick, for the pavement restoration along Cairo Lane and NW 127th Street, the price per square yard of _____ Dollars and_____Cents	$_____
54.	1830 SY	For milling (nominal 1 inch thick), surface course for permanent paving repairs along NW 32nd Ave, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
55.	1830 SY	For constructing for Type "V" permanent paving repairs (minimum 1 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
56.	500 SY	For constructing for Type "V" permanent paving installation (minimum 2 inch overlay) along NW 32nd Ave, as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____
57.	600 SY	For milling (nominal 1.5 inch thick), surface course for permanent paving repairs along NW 135th Street, the price per square yard of _____ Dollars and_____Cents.	$_____
58.	600 SY	For constructing for Type "V" permanent paving repairs along NW 135th Street Ave (Min 1.5-inch overlay), as per details provided in plans, the price per square yard of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
59.	740 SF	For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
60.	1635 SF	For furnishing and constructing 6-inch concrete driveway approach to match existing, the price per square foot of _____ Dollars and_____Cents.	$_____
61.	360 LF	For furnishing and constructing concrete curb and gutter restoration to match existing along the intersection between NW 127th Street and NW 32nd Avenue, the price per linear foot of _____ Dollars and_____Cents.	$_____
62.	8995 LF	For furnishing and constructing concrete valley gutter along Cairo Lane and NW 127th Street, the price per linear foot of _____ Dollars and_____Cents.	$_____
63.	30 LF	For furnishing and installing general guardrail at the outfall along Cairo Lane, the price per linear foot of _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
64.	Lump Sum	For furnishing and installing pavement markings, including signage and raised pavement markers, as indicated in plans, the lump sum price of _____ Dollars and_____Cents.	$_____
65.	Lump Sum	For demolishing and disposing existing median curb at the intersection between NW 127th Street and NW 32nd Ave, as indicated in plans, the price per lump sum of _____ Dollars and_____Cents.	$_____
66.	14 EA	For removing and disposing existing trees located at the median curb at the intersection between NW 127th Street and NW 32nd Ave, the unit price of _____ Dollars and_____Cents.	$_____
67.	Lump Sum	For providing full Traffic Control during construction along Cairo Lane, Alexandria Drive and NW 127th Street Maintenance of Traffic, the lump sum price of _____ Dollars and_____Cents.	$_____
Dedicated Allowances			
68.	7 each (Dedicated Allowance)	For repairing damaged fire hydrants assemblies, per Standard Detail WS 4.50, the price per each of _____ Dollars and_____Cents	$ 24,500

Item No.	Estimated Quantity	Description	Total
69.	7 each (Dedicated Allowance)	For demolishing and replacing damaged fire hydrant assemblies, per Standard Detail WS 4.50, the price per each of $6,750 Dollars and 0 Cents	$ 47,250
70.	7 each (Dedicated Allowance)	For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, the price per each of $1,100 Dollars and 0 Cents	$ 7,700
71.	38 each (Dedicated Allowance)	For repairing damaged water meters, including boxes, along Cairo Lane and NW 127th Street as per Standard Details shown in Plans, the price each of, $1,000 Dollars and 0 Cents	$ 38,000
72.	10 each (Dedicated Allowance)	For repairing damaged stormwater catch basins structures, the unit price of $5,500 Dollars and 0 Cents	$ 55,000
73.	5300 SF (Dedicated Allowance)	For sheeting and shoring ordered left in place by the Engineer for sewer and drainage improvements, the price per square foot of $20 Dollars and 0 Cents.	$ 106,000

Item No.	Estimated Quantity	Description	Total
74.	1500 CY (Dedicated Allowance)	For removal, transport and legal disposal of above-ground debris, including tipping fees, the price per cubic yard of _____$185_____ Dollars and_____0_____Cents.	$_277,500_____
75.	2000 SY (Dedicated Allowance)	For restoring sodded area (harmonization), the price per square yard of _____$19_____ Dollars and_____0_____Cents.	$__38,000_____
76.	**Sub-Total – Bid Items 1 through 75**	**$_____**	
77.	Dedicated Allowance	For providing uniformed, off-duty policemen for the purpose of maintenance of traffic, the aggregate sum of _____ Dollars and_____Cents.	$_____
78.	Dedicated Allowance	For all cost of required permit fees including Soil Management Plan and Health & Safety Plan, impact fees, if required by the Engineer, the sum of 5% of the Subtotal, Item 76 (0.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____

Item No.	Estimated Quantity	Description	Total
79.	Contingency Allowance	For unforeseen conditions, for minor construction changes and for quantity adjustments, if ordered by the Engineer, the sum of 10% of the Subtotal, Item 76 (.10) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
80.	Contingency Allowance	For unforeseen plan revisions due to ongoing permitting efforts if required by permitting approvals, only to be used if required and approved by the City, the sum of 5% of the Subtotal, Item 76 (.05) x (Subtotal, Item 76) _____ Dollars and_____Cents.	$_____
81.	**TOTAL BID – (Sum of Bid Item Nos. 76, 77, 78, 79, and 80,)**	$_____	

Note: For a detailed description of each Quotation Item, refer to Section 01025 of the Specifications entitled "Measurement and Payment.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

BID PROPOSAL FORM

The City of Opa-Locka reserves the right to waive any informality in any bid and to reject any or all bids.

TOTAL BASE BID PRICE FOR PROPOSAL (ITEMS 1 THROUGH 81): $_____
(FIGURES)

_____Dollars and

_____Cents

AMOUNTS SHALL BE SHOWN ON BOTH WORDS AND FIGURES. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BASE BID.

Bidder acknowledges that included in the various items of the bid proposal and in the TOTAL BASE BID PRICE are costs for complying with the Florida Trench Safety Act, F.S. 553.60 et. seq. The Bidder by signing and submitting the Trench Safety Act Compliance Statement is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards.

Contract award shall be based upon the total base bid price, as identified above, by the lowest responsive, responsible bidder.

_____ _____

FIRM NAME (PRINT) BIDDER'S SIGNATURE

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

GENERAL CONDITIONS

1.0 PERFORMANCE OF WORK: The Contractor shall supply all labor, transportation, materials, machinery, tools, apparatus and equipment necessary for the entire proper and substantial completion of his work, and be accountable for the safe, proper and reasonable construction, maintenance and use of the same during construction, and shall remove all construction equipment upon completion, and shall perform all work in the best and most workmanlike manner. Special care shall be taken by the Contractor in placing and removing stock piles of material, and in the work in general to avoid unnecessary injury to either public property or other areas adjacent to the work.

2.0 CONCURRENT WORK: Work may be performed concurrently by the utilities in the City or the City's Contractor in the right-of-way and it shall be the responsibility of the Contractor to coordinate his work with the utility companies, the City and the City's Contractors.

3.0 USE OF PUBLIC STREETS: Construction shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Any other excavated material spilled from trucks shall be removed by the Contractor and the streets shall be cleaned twice daily to the satisfaction of the Public Works Director.

4.0 EXISTING UTILITIES AND STRUCTURES: It will be the Contractor's responsibility to exercise all caution in the vicinity of any utility. The Contractor shall be fully responsible for, and make good all damages to buildings, telephone or other cables, sewers, water pipes, pavement, driveways, walls, sprinkler systems, survey markers, or other structures which may be encountered whether or not shown on the plans. The Contractor shall have a utility check performed prior to any construction.

4.1 The locations of existing utilities have been prepared using the best information available however, the information is not guaranteed. The Contractor shall be responsible for determining the location, character and depth of all utilities. The Contractor shall be responsible for and make good all damages to all pavement structures and utilities which may be encountered whether or not shown on the plans. The cost of restoration shall be included in the unit price stated in the proposal for the related work. No extras for restoration will be allowed.

4.2 The Contractor shall protect from damage all utilities, structures, surface and subsurface structures at or near the site of the work and shall repair or restore any damage to such facilities, except utilities, resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. If the Contractor fails or refuses to

repair any such damage promptly, the City may have the necessary work performed and charge the cost thereof to The Contractor.

4.3 At points where The Contractor's operations are adjacent to utility facilities, which if damaged, might result in expense, loss, disruption of service or other undue inconvenience to the public or to the Owner, work shall not be commenced until all arrangements necessary for the protection thereof have been made by the Contractor. The Contractor shall be solely and directly responsible to the Owner and operators of such utilities for any damage, injury, expense, loss, inconvenience, or delay caused by The Contractor's operations.

4.4 The Contractor shall not repair or attempt to repair utility damage but shall immediately contact the utility owner. The Contractor shall obtain the name, address, and telephone number of each utility company to contact. The Contractor shall submit to the Engineer these said names and addresses.

4.5 The Contractor shall comply with the Florida Building Code and City Code regarding precautions to be taken in the protection of existing vegetation, structure, utilities and improvements.

4.6 The Contractor shall maintain access to fire hydrants and alarm boxes throughout the prosecution of the work. Hydrants and fire alarm boxes shall be kept clear and kept visible at all times unless approved otherwise. If visibility cannot be maintained, The Contractor shall provide clearly visible signs showing the location of the fire hydrant and fire alarm boxes.

4.7 The Contractor shall comply with the requirements of the Clean Air Act and the Federal Water Pollution Control Act as well as other requirements specified in those regulations and guidelines listed thereunder.

5.0 **EXISTING LANDSCAPING:** The Contractor shall be fully responsible for maintaining in good condition, existing trees, grass and shrubs situated within the designated right-of-way, project site or on private property adjacent to the work.

6.0 **EXISTING SIGNS AND UTILITY CASTINGS:** All existing signs and utility castings shall be preserved and shall remain the property of the City of Opa-Locka. Those not reused shall be delivered to the Opa Locka Public Works Yard at 12950 NW 42 Ave in Opa Locka, FL 33054.

7.0 **STOCK PILING MATERIALS:** Contractor shall not stockpile materials at the project site unless approved in writing by the Engineer.

8.0 **PERMITS:** The Contractor shall obtain all required occupational licenses and permits, etc., and pay all required fees. Permits issued by the City will be issued without charge to the Contractor

9.0 **EXTRAS:** Bills for extras will be allowed only when work is ordered in writing and approved by the Public Works Director. No money will be allowed for extra work

unless approved in writing, beforehand, by the Public Works Director.

10.0 CLEANING UP: The Contractor will be required to leave the work and adjacent areas free of any accumulated rubbish or surplus materials on a daily basis, unless otherwise directed by the Public Works Director. In the event of failure or undue delay on the part of the Contractor, the City may employ such equipment and laboras may be necessary, and charge such costs against the Contractor and deduct the amount from the monies due the Contractor for work performed.

11.0 RESTORATION: The Contractor shall complete all restoration as the work is completed but in no event later than five (5) working days.

12.0 TESTING: The Engineer or other person designated by the Public Works Director to supervise the work shall have the right at any time to have tests made on any material used on the job. All expenses for tests shall be borne by the City of Opa-Locka, except the cost of re-testing materials which failed to meet the specifications and waiting time due to Contractor failure to be ready for tests when scheduled. The cost and scheduling of such re-testing shall be the responsibility of the Contractor. All re-testing shall be done by the testing laboratory which test the failed samples. The Contractor will inform the City of his source of materials with sufficient time to secure the necessary samples and perform the necessary tests. The Contractor shall request and receive inspections of specific phases of work asrequired elsewhere in these specifications. The Contractor shall provide current modified proctor test results for all fill material used on the job.

13.0 PAYMENT: Payment will be made in full compensation for all work performed, materials, labor, tools and equipment furnished, and incidental expenses necessary to complete the work. Payment shall be made on 90% of the monthly estimate and upon the presentation of partial releases of lien. Final payment shall be made upon presentation of a completion statement, receipt of the final releases of lien, receipt of as-built drawings and after final acceptance by the City.

14.0 ACCEPTANCE: Acceptance by the City shall not relieve the Contractor of the responsibility of correcting any defective part of the work resulting from either workmanship or materials or replacing or repairing damaged property resulting from any phase of the Contractor's work.

15.0 GUARANTEE: The Contractor shall guarantee all materials and workmanship for a period of one year from the date of **acceptance** by the City.

16.0 LINE AND GRADE: Where required as determined by the Engineer, the City will establish a base line and reference elevations. All additional lines and grades required for completion of the work shall be furnished at the Contractor's expense.

17.0 TRAFFIC MAINTENANCE: The Contractor shall provide all temporary signing, striping, detouring, barricading, signals, competent flagmen, etc. required in accordance with the minimum requirements of the latest Manual of Uniform Traffic

Control Devices, whenever and wherever needed for pursuance of the project, and/or as directed by the Engineer. The Contractor shall also coordinate these operations with the City of Opa-Locka Public Works Department. The Contractor shall supply the Engineer with a traffic maintenance plan.

18.0 PROTECTION OF WORK: It shall be the Contractors' responsibility to protect the public and workmen from ongoing construction hazards.

19.0 UNIFORMED POLICE: The Contractor shall be responsible for obtaining the services of the uniformed police officers as needed or as directed by the Engineer. The Contractor shall be reimbursed for the direct, actual expenses for such uniformed police officers.

20.0 INSPECTION: Inspection will be required during all phases of construction, and it shall be the Contractor's responsibility to contact the Engineer or its representative when any work is being performed. The Contractor shall also be responsible for coordinating all inspections of work performed by Subcontractors. Failure to contact the Engineer/Architect or its representatives to obtain the required inspections shall be sufficient cause for rejection.

21.0 LICENSES: The Contractor and all Subcontractors shall submit at the time of bidding, copies of all licenses held by the Company that pertain to the type of work to be performed under this contract. Failure to submit copies of licenses is grounds for rejection of the bid.

22.0 CONTACT PERSON: The Contractor shall provide the Engineer with a local (Miami Dade County) telephone number where the Contractor can be contacted 24 hours a day for the duration of the project.

23.0 UTILITY COORDINATION: The City will not be liable for any delay or added expense the Contractor experiences due to the actions of others, nor shall the City be held responsible for any damages which may be incurred, due to the actions of the Contractor or representative.

24.0 EXAMINATION OF PREMISES: Before submitting proposals for his work, each bidder will be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obligated to work, including all conditions which will in any way affect the work under this contract.

25.0 NON-EXCLUSIVE CONTRACT: Nothing in this contract shall prevent the City from employing other contractors to perform the same or similar work. This can include other contractors working concurrently on the same location.

THE CITY OF OPA-LOCKA

OPA-LOCKA, FLORIDA

SPECIAL CONDITIONS

1.0 SCOPE OF WORK:

1.1 CAIRO LANE AND NW 127TH STREET IMPROVEMENTS: The work generally consists of but is not necessarily limited to the following: the selling, delivering and installing of Contractor furnished materials and equipment necessary for the complete replacement of a section of 3-inch force main, a section of solid drainage trunk line ranging in size from 18-inch to 36-inc including manholes and treatment structure, and the installation of water service connections within Cairo Lane, NW 127th Street and Alexandria Drive. Replacement including cleaning and testing as required, maintenance of water and sewer service; together with all appurtenant for miscellaneous items and work for a completed project.

2.0 COMPLETE PROJECT REQUIRED: The specifications describe the various items or classes of work required enumerating or defining the extent of same where necessary to clarify the drawings, but failure to list any items shall not relieve the Contractor from furnishing, installing and performing such work where shown on the drawings, required by any part of the specifications or necessary for the satisfactory completion of the project.

3.0 WORK SCHEDULE: The Contractor shall submit schedules which show the order in which the Contractor proposes to carry out the work with dates for starting various parts of the work and estimated completion dates. The progress schedules shall be furnished to the Engineer prior to the pre-construction meeting date which will be established by the City.

4.0 PRE-CONSTRUCTION MEETING: After the contract has been awarded and signed, but prior to commencement of work, a pre-construction meeting shall be held. The meeting shall be attended by authorized representatives of the City and Contractor. The purpose of this meeting will be to review the Contractor's submitted progress schedule, clarify jurisdiction and to acquaint all parties presentwith the authorized representative to be notified. The Contractor will be notified inwriting as to the date and place of the meeting.

5.0 AS-BUILT INFORMATION: As work progresses, the Contractor must record all information pertaining to changes and deviations from the contract drawings with special attention to all underground installations. At completion of the job, the Contractor shall submit a complete set of reproducible as-built drawings to the City.

Additionally, the Contractor shall maintain a field book with all deviations recorded. The completed as-built sketches and field books shall become the property of the City. As-built information must be supplied with each pay request. Failure to provide as-built information is cause to reject pay request.

6.0 **LIQUIDATED DAMAGES:** Should the Contractor, or in the case of default, the surety, fail to fully complete the work within the time stipulated in the proposal, the minimum sum of five hundred dollars ($500.00) per day shall be deducted from any money due the Contractor not as a penalty but as liquidated damages.

7.0 **APPROVAL OF MATERIALS:**

7.1 Whenever in these plans and/or specifications a certain brand of materials is specified, it is done for establishing the level of quality, capacity and the characteristics desired. Materials or products specified by the name of manufacturer or the brand or trade name or catalog reference shall be the basis ofthe bid.

7.2 The Contractor shall make written request for the use of alternate materials within ten (10) days after the Contract is signed, and before ordering any materials requiring approval. If the Contractor makes no request for approval of alternate materials within ten (10) days of the signing of the Contract, it shall be assumed that he intends to furnish the items specified.

7.3 The use of materials other than that specified without the written approval of the Engineer shall be sufficient reason for rejection of the work.

8.0 **USE OF PUBLIC STREETS:** Construction in the right-of-way or streets shall be performed in such a manner as to provide a minimum of inconvenience to the residents of the area. Access to all residents' homes shall be maintained at all times. A minimum of one traffic lane shall be open at all times.

9.0 **STRIPING**:

9.1 Temporary striping shall be placed within 48-hours of completion of each course of asphalt unless another course is placed within 48-hours. The cost of temporary striping shall be included in the unit cost of permanent thermoplastic striping.

9.2 Permanent thermoplastic striping shall be placed within 30 days of completing final paving unless otherwise approved by the Engineer.

10.0 **RESTORATION OF SURVEY MARKERS:** When existing survey markers are removed or destroyed as a result of the construction, it shall be the responsibility ofthe contractor to replace them using a registered licensed surveyor.

11.0 **PROJECT LAYOUT:** The Contractor shall layout the proposed work and contact all utilities to verify utility locations. If changes are required, due to conflict or design,the

Engineer will make the final determination.

12.0 WORKING HOURS: The normal City working hours are Monday through Friday 8:00 a.m. until 5:00 p.m.

13.0 FINANCIAL STATEMENT: As part of the Contractor's submittal, he/she shall include a certified financial statement detailing the company's financial status over the previous two years.

14.0 NOTICE TO PROCEED: A single notice to proceed will be issued for this project. Upon receipt of the notice to proceed, the contractor shall commence work upon the site(s) within 10 working days and continue such work in an expeditious manner to a conclusion acceptable to the Engineer. No more than 7 consecutive days without construction activity will be allowed unless approved by the Engineer.

15.0 ENVIRONMENTAL PROTECTION:

General Requirements – The Contractor shall provide and maintain environmental protection during the life of the Contract. Environmental protection shall be provided to correct conditions that develop during the conductance of the work, or that are required to control pollution that develops during the development of project. The Contractor's operations shall comply with all Federal, State and local regulations pertaining to water, air, solid waste, and noise pollution.

Protection of Natural Resources – It is intended that the natural resources within the site and outside the limits of permanent work performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine his work activities to areas defined by the Contract Documents. All work under this contract shall be performed in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the City. At alltimes special measures shall be taken to prevent oily or hazardous substances from entering the ground, drainage areas, or local bodies of water.

Control and Disposal of Wastes – The Contractor shall transport and dispose of allwaste in a manner that complies with Federal, State, and local requirements. The Contractor shall provide the Engineer with a copy of any state and/or local permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses which reflect such agency's approval and compliance with applicable solid waste disposal regulations. The permits or licenses and the location of the disposal area shall beprovided prior to transporting any waste material. Fueling and lubricating of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil shall be disposed of in accordance with approved procedures meeting Federal, State and local regulations.

Preservation of Water Courses – The Contractor shall maintain the working area free of excess debris and litter. Furthermore, the Contractor shall take all necessary precautions to protect the Canal waterway in a manner that complies

with Federal, State, and local requirements.

The maximum use of low-noise emission products as certified by the Environmental Protection Agency shall be made when available.

16.0 **SAFETY**: The Contractor shall be responsible for the safety of the Contractor's employees. The Contractor shall abide by all Federal, State, County, and City safety requirements and regulations. The Contractor is responsible to furnish the Contractor's employees with all required safety equipment. The Contractor is required to comply with all applicable OSHA regulations including, Right to Know, Confined Space Entry, Airborne Blood Pathogens.

The Contractor is fully responsible to furnish safety equipment to all of the Contractor's employees on the Owner's job site, including but not limited to safety glasses, gloves, vests, hard hats, braces or any other required safety item. The Contractor is required to make certain that each employee is wearing the proper safety clothing including shoes.

17.0 **CONFINED SPACE ENTRY PERMIT:** The Contractor must comply with all the provisions contained in OSHA 1910.146 and shall show proof of compliance with the first project invoice. No payment shallbe made until such proof is presented and approved by the City

.

18.0 **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY.** THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THESE CHANGES SHALL BE REFLECTED IN ITEM NO. 80 OF THE BID ITEM LIST.

TECHNICAL SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

01010 SUMMARY OF WORK

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. This section describes the project in general and provides an overview of the extent of the work to be performed under this Contract. Detailed requirements and extent of work is stated in the applicable Specification sections and shown on the Contract Drawings. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, testing, and completion of the work under this Contract.

1.0.2 DEFINED TERMS

A. As-Built Drawings: As-built drawings reflect field changes and construction modifications to the conformed Bid Documents.

B. Contract Documents: Shall mean all those documents named in the contract.

C. Contractor: Contractor shall mean any person engaged to supply labor, materials por equipment for use in the fulfillment of the project.

D. Construction Drawings: Shall mean the drawings, plans, or reproduction thereof which show scope, character, location, dimensions, and other details of the work to be performed under the Contract Documents.

E. Engineer: Shall mean the City Engineer of the City of Opa-Locka, Public Works Department, or City's designee.

F. Project: Shall mean and include all construction, for which the Contractor is responsible under the contract documents

G. Regulations: Shall mean laws, ordinances, statutes, and lawful order issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the work.

H. The City: Shall mean the City of Opa-Locka, Florida.

I. Work: Shall mean all labor, permits, bonds, equipment, materials and incidentals required.

1.0.3 SPECIFICATIONS

A. The specifications included in these Contract Documents establish the minimum performance and quality requirements for materials and equipment together with the minimum standards for quality of workmanship and appearance. Generally, there has been no attempt to separate the Specification sections into groups for the work of separate Subcontractors, or for work to be performed by the various trades. Should there be any question as to the interpretation of any Specification section or part of Specification section, such question should be directed to the Engineer prior to the submittal of a proposal for the work under this Contract.

B. The Cairo Lane, NW 127th Street improvements work shown on the drawings is intended to be comprehensive and descriptive, not an exact and complete representation of the actual finished work. Pipeline replacement shall include all accessories and components required to provide a complete and satisfactory system as specified, even though some items may not be specifically shown on the drawings.

C. It is the intent of the City to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

D. The Contractor shall also supply all sheeting, shoring, bracing and all other labor, material or equipment required to preclude damage to, or loss of functionality of, any existing facility or system.

1.0.4 REASONABLY IMPLIED PARTS OF THE WORK

A. Any part of the work which is not mentioned in the specifications but is shown on the drawings, or any part not shown on the drawings but described in the specifications, or any part not shown on the drawings nor described in the specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work, without extra cost to the City, as if fully described in the specifications and shown on the drawings, and the expense thereof shall be included in the applicable unit prices or lump sum bid for the Work.

1.0.5 DESCRIPTION OF WORK

A. The project is located along Cairo Lane between NW 127th Street and NW 135th Street; NW 127th Street between Cairo Lane and NW 32nd Ave.

B. The project proposes the installation of an HDPE corrugated pipe ranging in size between 15-inch to 24-inch, the installation of ten (10) stormwater catch basin

structures, repairing of damaged existing catch basin structures and installation of cartridge-based stormwater treatment structure. The project would involve installation of rip-rap at stormwater outfall embankment, installation for new pipeline including excavation and backfill, pavement restoration and pavement markings.

C. Additionally, the project proposes the installation of approximately 145 LF of 3-inch HDPE force main pipe, the installation sanitary service connections, and a connection to an existing 16-inch DIP force main. The project would involve installation of adjusting rim elevation of existing valves to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

D. The project also proposes the installation of two (2) fire hydrant assemblies for the water system, repairing or replacing any damaged existing fire hydrants, and repairing or replacing any damaged existing water meters. The project would involve installation of adjusting rim elevation of existing valves and water meter boxes to meet proposed grate, , installation for new pipeline including excavation and backfill, asphalt pavement restoration and pavement markings.

E. It is the intent of the City to obtain a complete and working installation under this Project and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.6 PROJECT BACKGROUND

On May 2015, a Design-Build project was awarded by the City to Intercounty Engineering Inc. where the original design included improvements to the water, wastewater, stormwater systems and roadway reconstruction at Cairo Lane, NW 127th Street and sections of Alexandria Drive. The construction began in February 2016 but was stopped in July 2019.

During this period, fir the stormwater system the contractor achieved the installation of 85% of the planned infrastructure, consisting of eighteen (18) catch basins and 1,226 LF of trunk drainage pipping along Cairo Lane, as well as thirteen (13) catch basins and 1,987 LF of trunk drainage pipping along NW 127th Street. The remaining 15% of the planned improvements are pending primarily in Cairo Lane, where two (2) catch basins and 1,546 LF of drainage pipelines from the original design await installation.

Additionally, for the wastewater improvements the contractor achieved only 65% of the planned infrastructure leaving 35% of the proposed improvements pending. Approximately 967 LF of 3-inch HDPE force main was installed along Alexandria Drive with only the service connections pending and approximately 2,449 LF of 3-inch HDPE force main was installed along Cairo Lane, leaving the interconnection to the 16-inch CIP force main pending as well as the installation of the service lines.

For the water system improvements, the contractor achieved the installation of 100% of the water distribution pipelines and seven (7) fire hydrants, which represents almost the

entirety of the proposed system. The remaining improvements are pending primarily on NW 127th Street, where to (2) fire hydrant await installation.

The roadway reconstruction pertained to the last stage of the project, the entirety of these improvements is still pending.

1.0.7 WORK COVERED BY CONTRACT DOCUMENTS

A. Following receipt of Notice to Proceed with the work, the Contractor shall notify the Engineer at least ten (10) days before he/she is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing facilities. Any control modifications to the existing facilities shall not be made without first obtaining written permission form the Engineer and the City.

C. Critical events in the sequence of construction are specified herein. The outline sequence of construction does not include all items necessary to complete the work but is intended to identify the sequence of critical events necessary to minimize disruption to the ongoing operation. The sequence of construction is a precedence requirement and does not attempt to schedule the Contractor's work. It is intended only to indicate which activities must precede other activities in order to minimize interference and disruptions.

D. The existing facilities shall be maintained in an operable condition by the Contractor during construction, as indicated in the sequence of construction. All work by the Contractor that disrupts the normal operations shall be shown on the Construction Schedule and specifically scheduled with the City's staff. The schedule notification shall consist of a written notice defining the work to be accomplished, the function that will be interrupted, the duration of the interruption, and the mitigation effort to be performed by the Contractor to maintain systems capacity continuously. The written notice shall be submitted to the City fourteen (14) days in advance of the proposed work and the City will respond to the Contractor in writing within seven (7) days of receipt of the notice regarding the acceptability of the proposed plan.

1.0.8 SEQUENCE OF CONSTRUCTION

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned

specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

   a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

   b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to any excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.**

11. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

12. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

13. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

14. The general sequence of work shall be as follows:

1) Phase I – Mobilization

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:
Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 5 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 6 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 7 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 8 At Cairo Lane

At STA. 12+85.40±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 9 At Cairo Lane

At STA. 14+09.55±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 10 At Cairo Lane

At STA. 16+29.36±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 11 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 12 At Cairo Lane

At STA. 17+17.51±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 13 At Cairo Lane

At STA. 17+37.10±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

At STA. 18+16.42±:

Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 14 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 15 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 16 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 17 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 23 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 24 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 25 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 26 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 27 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 28 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 29 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 30 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 31 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 32 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 34 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 35 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 36 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 37 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 38 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 39 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 40 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

C. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01011 SITE CONDITIONS

PART 1 – GENERAL

1.0.1. SITE INVESTIGATION

A. The Contractor acknowledges that he has satisfied them as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation: disposal, handling and storage of materials; availability of labor, water, electric power, roads; disposal of water from construction; uncertainties of weather; the conformation and conditions of the ground; the type of equipment and facilities needed preliminary to and during the prosecution of work and all other matters which can in any way affect the work or the cost thereof under this contract.

B. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City included with these contract documents. Any failure by the Contractor to acquaint the City or them with all the available information will not relieve them from the responsibility for properly estimating the difficult or cost thereof under this Contract.

C. The Contractor acknowledges that by personal field observation or other means satisfactory to himself, performed prior to the bid, he has included in the prices bid all costs for dealing with all construction problems create by observable above or on grade features on or adjacent to the site of the site of the work whether or not these features are shown on the plans or described in the specifications. In instances where the observable features indicate subsurface conditions which may affect the project work, as for example, a pavement patch or catch basin gratings indicating respectively a utility or storm sewer not shown on the plans, the Contractor acknowledges that he has made timely, diligent, inquiry of the Engineer or by other means fully satisfied themselves prior to the bid as to the nature of, and costs created by, the subsurface condition and included all costs therefore in the prices bid.

1.0.2. SITE CONDITIONS

A. All information obtained by the City regarding the site conditions, topography, subsurface information, groundwater contamination, groundwater elevations, existing construction of site facilities as applicate, and similar data will be made available for inspection at the office of the Engineer upon request. Such information is offered as advisory information only. Neither the Engineer nor the City assumes any responsibility for the completeness of, or for the Contractor's interpretation of, such advisory information. Prior to bidding and after written approval from the City, bidder shall make his own investigations to satisfy themselves with site conditions at their own cost.

B. Surface investigations, including test borings, have been made to indicate subsurface conditions at locations in the project.

C. Prospective bidders are advised, at their own expense, to make such subsurface investigation, by boring or test hole excavation, as may be desirable. However, such work shall be scheduled by appointment with the Engineer if for a City site or by notification to the City and property permitted if in the public right of way.

1.0.3. DIFFERING SUBSURFACE CONDITIONS

A. In the event Subsurface or latent physical conditions are found materially different from those indicated in these documents and differing materially from those ordinarily encountered and generally recognized as inherent in the character of work covered in these project documents, promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

B. The Engineer will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer finds that such conditions do so materially differ as to cause an increase or decrease in cost and time considered reasonable by the Engineer, the City will make the final decision regarding any adjustment in cost or time for completion.

C. In the event that site conditions differ from those expected by the Contractor, the Contractor shall proceed to complete the work as contemplated by the plan and specifications on his own cost and expense. If in the discretion of the Engineer, the difference in site conditions renders completion of the work as described by the plans and specifications impossible, the Engineer may alter the work, whereupon the Contractor shall be compensated for any extra work pursuant to “Extra Work and Payment therefore” of the special conditions; the Engineer shall no alter the work where the site conditions render the work more difficult or costly to perform, if such work is otherwise still possible as described in the contract documents.

1.0.4. EXISTING UTILITIES AND LOCATION SERVICES

A. Known utilities and structures adjacent to or encountered in the work are shown on the drawings. The locations shown are taken from existing records and the best information available from the existing plans; However, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Engineer or the City for their accuracy or completeness.

B. **No request for additional compensation or Contract time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the work shall rest solely with the Contractor.**

C. Prior to proceeding with excavation, the Contractor shall contact all utility companies and all other users of the right of way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three (3) normal working days before starting construction. The Contractor shall proceed with caution in the excavation and preparation so that the exact location of underground utilities may be determined.

D. It is the responsibility of the Contractor to ensure that all utility or other existing facilities, the stability of which may be endangered by the close proximity of excavation, are temporarily held in position while work proceeds in the vicinity of the facilities and that the utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

E. The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, the Contractor shall immediately notify the responsible official of the organization operating the interrupted utility. The Contractor shall lend all possible assistance in restoring services and shall assume all cost, charges, or claims connected with the interruption and repair of such services, as determined by the City.

1.0.5. CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

A. Where the Contractor's operation could cause damage or inconvenience to railway, telephone, fiber optic, television, electrical power, oil, gas, water, sewer, irrigation system, or any other utility, public or private, the Contractor shall make all arrangements necessary for the protection of these utilities and services.

B. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities and utility poles where necessary. **Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines whether shown on the plans or not.**

The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

C. The Contractor and his Subcontractor shall be solely and directly responsible to the Owners and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this contract.

D. Neither the City nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractors failure to protect utilities encountered in the work.

E. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any utility service be allowed unless granted by the Owner of the utility.

F. In the event water service lines that interfere with construction are encountered, the Contractor may, by obtaining prior approval of the water utility, cut the service, dig through, and restore the service with similar and equal materials at the Contractor's expense and as approved by the Engineer.

G. Replace, with material approved by the Engineer, at Contractor's expense, any and all other laterals, existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents and as approved by the Engineer.

1.0.6. INTERFERING STRUCTURES

A. Take necessary precautions to prevent damage to existing structures whether on the surface, above ground, or underground. An attempt has been made to show major structures on the plans. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and is presented as a guide. The Contractor is solely responsible for field verification of all information provided and to determine the type, location, elevation and extent of any utilities which may not have been shown on the plans.

1.0.7. FIELD RELOCATION

A. During the process of construction, it is expected that minor relocations of the work may be necessary. Such relocations shall be made only by the direction of the Engineer at the Contractor’s expense. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in

order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor fails to notify the Engineer when an existing structure is encountered, and proceeds with the work despite this interference the Contractor does so at his own risk.

B. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the specifications and the permitting documents.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01015 INDEX OF DRAWINGS

PART 1 – GENERAL

1.0.1. PLANS BY THE CITY

A. Plans dated December 2022 and any subsequent revision, thereto, introduced by Addenda prior to bid, showing this work, are hereby made a part of the Contract Documents, and are **listed** as follows:

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
WATER MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		TITLE SHEET,
G-02		GENERAL NOTES
G-03		NOTES AND LEGENDS,
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-02		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-03		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-04		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-05		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-06		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-07		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS

C-08		PLAN AND PROFILE WATER SYSTEM IMPROVEMENTS
C-09		STANDARD DETAILS (WATER SYSTEM)
C-10		STANDARD DETAILS (WATER SYSTEM)
C-11		STANDARD DETAILS (WATER SYSTEM)

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
FORCE MAIN SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		GENERAL PLAN & NOTES
G-04		KEY SHEET
CIVIL		
C-01		PLAN AND PROFILE CAIRO LANE
C-02		PLAN AND PROFILE CAIRO LANE
C-03		PLAN AND PROFILE CAIRO LANE
C-04		PLAN AND PROFILE CAIRO LANE
C-05		PLAN AND PROFILE CAIRO LANE
C-06		STANDARD DETAILS
C-07		STANDARD DETAILS

OPA-LOCKA
CAIRO LANE AND NW 127TH STREET IMPROVEMENTS
ROADWAY RECONSTRUCTION AND DRAINAGE SYSTEM

Sheet No.	Drawing No.	Title
GENERAL		
G-01		COVER,
G-02		GENERAL PLAN & NOTES
G-03		KEY SHEET
G-04		POLLUTION PLAN CAIRO LANE
G-05		POLLUTION PLAN NW 127TH ST
CIVIL		
C-01		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-02		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-03		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-04		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-05		ROADWAY AND DRAINAGE PLAN & PROFILE – CAIRO LANE
C-06		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-07		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-08		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-09		ROADWAY AND DRAINAGE PLAN & PROFILE – NW 127TH STREET
C-10		ROADWAY PLAN NW 32ND AVE
C-11		CROSS SECTIONS - CAIRO LN
C-12		CROSS SECTIONS - CAIRO LN

C-13	CROSS SECTIONS - CAIRO LN
C-14	CROSS SECTIONS - CAIRO LN
C-15	CROSS SECTIONS - CAIRO LN
C-16	CROSS SECTIONS - NW 127TH STREET
C-17	CROSS SECTIONS - NW 127TH STREET
C-18	CROSS SECTIONS - NW 127TH STREET
C-19	CROSS SECTIONS - NW 127TH STREET
C-20	TYPICAL CROSS SECTIONS
C-21	TYPICAL CROSS SECTIONS
C-22	STANDARD DETAILS
C-23	STANDARD DETAILS
C-24	STANDARD DETAILS
C-25	STANDARD DETAILS
C-26	EROSION CONTROL NOTES & DETAILS
C-27	STORMWATER POLLUTION PREVENTION PLAN
C-28	STORMWATER POLLUTION PREVENTION PLAN
C-29	STORMWATER POLLUTION PREVENTION PLAN
C-30	STORMWATER POLLUTION PREVENTION PLAN
C-31	STORMWATER POLLUTION PREVENTION PLAN
C-32	SIGNING AND PAVEMENT MARKINGS
C-33	SIGNING AND PAVEMENT MARKINGS
C-34	SIGNING AND PAVEMENT MARKINGS
C-35	SIGNING AND PAVEMENT MARKINGS
C-36	SIGNING AND PAVEMENT MARKINGS
C-37	MAINTENANCE OF TRAFFIC PLANS NOTES AND DETAILS

B. **Due to the possibility of typing errors or omissions, the above list shall not be considered as necessarily complete, nor shall the City Standard Details which may be included elsewhere herein be considered as forming a complete listing of all City Standard Details which may apply to this Project. Perform all work shown on all sheets of the Plans, as specified herein or necessary for a complete functional installation and no extra compensation will be made due to the omission or incorrect listing of a Drawing in this Section. All City Standard Details are incorporated in these Contract Documents by reference and all work shall be performed in accordance with all applicable City Standard Details.**

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

01016 SAFETY REQUIREMENTS, HURRICANES PREPAREDNESS AND PROTECTION OF PROPERTY

PART 1 – GENERAL

1.0.1. CONTRACTOR'S RESPONSIBILTY FOR SAFETY

A. Conduct whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during the contract period. This requirement shall apply continuously and not be limited to normal working hours.

B. The Contractor shall be in compliance with all applicable provisions of the Occupational Safety and health Act of 1970. The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for his review before "Notice to proceeded" will be issued.

C. Neither the professional activities of the design professional, nor the presence of the design Professional nor his or her employees and subconsultants at a construction site, shall relieve the Contractor and any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequence techniques or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the project documents and any health and safety precautions required by any regulatory agencies.

1.0.2. FEDERAL STATE AND LOCAL SAFETY REQUIEREMENTS

A. Safety provisions shall conform to the federal and state Departments of labor Occupational Safety and Health Act (OSHA), and all other applicable federal, State, County, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these project Documents. Where any of these are in conflict, the more stringent requirements shall be followed. Contractor's failure to thoroughly familiarize with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

B. All excavations made in the earth shall be performed in compliance with the State of Florida Trench Safety Act, OSHA 29 CFR 1926 Subpart P (Chapter 90-96, Laws of Florida). The Contractor shall appoint a *competent person*, in accordance with subpart P, who shall be present at the jobsite. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

C. The Contractor shall be familiar with the “Underground facility Damage” Prevention and safety Act” Florida Statute 556. The Contractor shall contact the Sunshine State One Call of Florida, at 01-800-432-4770 or by submitting an internet ticket entry via www.sunshine811.com) at least 48 hours prior the excavation. Failure to familiarize himself with the safety provisions shall not relieve him/her from compliance with the obligations and penalties set forth therein.

D. Conduct operations in such a manner utilizing warning devices, such as traffic cones, barricades and warning lights that traffic, pedestrian and City personnel are given adequate warning of hazards of the worksite as may be deemed necessary by the City, Engineer of Record, and governing agency having jurisdiction over the work or political subdivision.

E. The Contractor shall be in compliance with all applicable provisions of the OSHA Code of Federal Regulations (CFR), including, but not limited to, the following:

1. 29 CFR Part 1910 Subpart D - Walking-Working Surfaces
2. 29 CFR Part 1910 Subpart G - Occupational Health and Environmental Control
3. 29 CFR Part 1910 Subpart H - Hazardous Materials
4. 29 CFR Part 1910 Subpart I - Personal Protective Equipment
5. 29 CFR Part 1910 Subpart J - General Environmental Controls
6. 29 CFR Part 1910 Subpart N - Materials Handling and Storage
7. 29 CFR Part 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment
8. 29 CFR Part 1910 Subpart Q - Welding, Cutting and Brazing
9. 29 CFR Part 1910 Subpart S – Electrical
10. 29 CFR Part 1910 Subpart T - Commercial Diving Operations
11. 29 CFR Part 1910 Subpart Z - Toxic and Hazardous Substances
12. 29 CFR Part 1926 Subpart E - Personal Protective and Life Saving Equipment
13. 29 CFR Part 1926 Subpart H - Materials Handling, Storage, Use, and Disposal
14. 29 CFR Part 1926 Subpart I - Tools - Hand and Power
15. 29 CFR Part 1926 Subpart J - Welding and Cutting

16. 29 CFR Part 1926 Subpart K – Electrical

17. 29 CFR Part 1926 Subpart L – Scaffolds

18. 29 CFR Part 1926 Subpart M - Fall Protection

19. 29 CFR Part 1926 Subpart P – Excavations

20. 29 CFR Part 1926 Subpart Q - Concrete and Masonry Construction

21. 29 CFR Part 1926 Subpart S - Underground Construction, Caissons, Cofferdams, and Compressed Air

22. 29 CFR Part 1926 Subpart Z - Toxic and Hazardous Substances

23. 29 CFR Part 1926 Subpart AA - Confined Spaces in Construction

24. 29 CFR Part 1926 Subpart CC - Cranes and Derricks in Construction

F. In addition, the Contractor shall adhere to any other applicable Federal, State and Local Safety and Health Regulations involving General industry and/or Construction Standards not mentioned in the Specifications.

G. For trench excavations in excess of five (5) feet in depth, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," the "Trench Safety Act" section of the Quotation, and Section 6.01 "Excavation."

H. The Contractor shall comply with the provisions of Florida Statutes Chapter 556, "Underground Facility Damage Prevention and Safety Act." The Contractor shall contact Sunshine 811 by calling 811 or 1-800-432-4770, or by submitting an internet ticket entry via www.sunshine811.com, at least forty-eight (48) hours prior to any excavation. Failure to familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and the penalties set forth herein.

I. All open excavations made in the earth shall be performed in compliance with OSHA 29 CFR Part 1926 Subpart P - Excavations, and Florida Statutes Chapter 553, Part III, "Trench Safety Act." The Contractor shall appoint a "competent person," in accordance with Subpart P, who shall be present at the job site. A "competent person" shall mean one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

1.0.3. SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

A. The Contractor shall at all time provide proper facilities for safe access to the work by authorized government officials.

1.0.4. CONSTRUCTION SAFETY PROGRAM

A. Develop and maintain for the duration of the project, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor's Manual of Safety practices outlining the firms policies on field safety procedures for employees shall be submitted to the Engineer for review before "Notice to Proceeded" will be issued. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

B. Certain products specified in these specifications contain warnings by the manufacturers that under certain conditions, if instructions for use are not followed, a hazardous condition may exist. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.

C. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's Safety Supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

1.0.5. SAFETY EQUIPMENT

A. As part of the safety program, maintain at an office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and stablish the procedure for the immediate relocation to a hospital or a doctor's care of any person who may be injured on the jobsite.

B. Perform all necessary work to protect all personnel and the general public from hazard, including, but not limited to, surface irregularities or unramped grade changes, and trenches or excavations. Furnish barricades, lanterns, and proper signs to safeguard all persons and work.

C. There shall be no oil dripping from equipment or oil spills.

D. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags, and remnants of the material in a manner approved by the City of Environmental Resources Management at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM, and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

E. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, logging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.

F. During construction, construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railings, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards. All such barriers shall have adequate warning lights as necessary, or required, for safety.

1.0.6. STORAGE OF HAZARDOUS MATERIALS

A. The material shall be stored and handled in a proper and safe manner and upon its use, immediately dispose of the containers, cans, rags and remnants of the material in a manner approved by the Department of Environmental Resources Management (DERM) at the Contractor's sole cost. The Contractor is not allowed to store empty containers at the site. In case of any violation, the Engineer will report such violation to DERM and the Contractor shall be subject to all penalties and fines as required by State and County regulations.

B. The Contractor is hereby cautioned that he cannot store any environmentally hazardous materials such as solvents, greases, lubricants or any other type of chemical substances at the Pump Station site. The Contractor shall be allowed to keep only such materials at the site for immediate use.

1.0.7. ACCIDENT REPORTS

A. If death, serious injuries, or series damage are caused, report the accident immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer and the City all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

B. If a claim is made by anyone against the Contractor or any Subcontractor on account of any accident, promptly report the facts in writing to the Engineer and the City, giving full details of the claim.

1.0.8. FIRE PREVENTION AND PROTECTION

A. Perform all work in fire-safe manner. Furnish and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.0.9. HURRICANE PREPAREDNESS

A. During such periods of time as are designated by the United States Weather Bureau as being a hurricane alert, the Contractor shall perform all precautions as necessary to safeguard the work and property, including the removal of all small equipment and materials from the site, lashing all other equipment and materials to each other and to rigid construction, and any other safety measures as may be directed by the Engineer.

B. During the hurricane season, which runs from June 1st to November 30th, it may become necessary to suspend work due to an impending storm until the proper working conditions prevail. In the event of a tropical storm or hurricane, it is the Contractor's responsibility to secure the jobsite in anticipation of the storm.

C. Fifteen (15) days prior to beginning of construction, the Contractor shall submit to the City or designee a Hurricane Preparedness Plan. The plan shall outline the necessary measures that the Contractor proposes to perform in the event of a tropical storm or hurricane in order to protect all work, materials, and equipment from exposure and properly safeguard all components of the project.

D. Prior to the Start of Work: The Contractor shall submit for approval, a plan of action for the specific actions to be taken on this specific project during a hurricane warning. The Contractor shall ensure operation of the by-pass system, if applicable, during the storm event. Backup power shall be included in case of power failure from FPL, as needed.

E. Upon notification of Hurricane Watch:

1. Formal notification to all Contractors to prepare and submit for approval a Plan of Action for the specific actions to be taken on their particular projects.

F. Upon notification of a Hurricane Warning:

1. Formal notification to the Contractors to implement their approved plan of action to protect the project and the public.

2. For pipeline construction projects within the public right-of-ways, the Contractor will be notified by the Construction Manager Office to suspend his construction operations. The Contractor will backfill all open trenches, remove all construction equipment and materials from the right-of-way, remove unnecessary traffic barricades and signs, secure remaining barricades by "half burial" or "double sandbags".

G. Post Disaster Work: In the event of a disaster declaration by the local or state governing authorities, the City may choose to obtain the services of the Contractor to perform work made an imminent priority for the disaster event. The compensation for the additional work caused by the disaster shall be negotiated between the Engineer

and the Contractor with written approval provided by both parties prior to mobilization at the designed location or locations. The value of the work performed shall be up to the original contract with contingencies and dedicated allowances.

1.0.10. JOINT SURVEY TO ESTABLISH AUTHENCITY OF POSSIBLE DAMAGE CLAIMS

A. The Contractor shall maintain vertical and horizontal survey control points on all structures and improvements, located in the vicinity of the work prior to beginning work, and shall periodically check the points for movements with copies provided to the Engineer, of the survey notes for each survey and a copy of the layout of the survey control points.

B. After the contract is awarded and before commencement of work, the Contractor shall perform a thorough examination of existing buildings, structures and other improvements in the vicinity of the work, as applicable, which might be damaged by his operations.

1. Examinations of existing structures, buildings, and other improvements in the vicinity of the work shall be done by the Contractor. The scope of the examination shall include cracks in the structures, settlement, leakage, and similar conditions. The City assumes no responsibility for pre-existing conditions of the structure.

2. Records in triplicate of all observations shall be prepared by the Contractor, photographs shall be taken by the Contractor signed and dated, with descriptive information and in the manner specified above. One signed copy of every document and photograph will kept on file in the office of the Engineer. Video recording also required.

3. The above records are intended to be used as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and are for the protection of the Contractor and the City, and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work.

C. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such detective pavement exist prior to proceeding with any work in the vicinity. Preconstruction videos and digital pictures shall be taken with date stamps of the entire area of work. A copy of all such notices shall be forwarded to the City.

1.0.11. TRAFFIC – GENERAL

A. Traffic safety and traffic control devices shall eb employed on all private and public construction work withing the public right-of-way. Such measures shall be established

and provided in conformance with the following regulations and in conformance with the Miami-Dade County Public Works Manual.

B. For construction within the City's public right-of-way, the Contractor shall submit two sets of construction plans for review to the City of Opa-Locka Public Works Department.

C. All traffic control and warning devices so specified shall, unless otherwise specified by the City be furnished, installed according to the Miami-Dade County Public Works Manual, Part I, Standard Details traffic control and safety by an Uniformed Police Officer, when specified, shall by furnished by the Contractor.

D. The Contractor shall take necessary precautions to ensure complete protection to public health, welfare, and safety. Adequate protection and warning devices shall be placed at locations surrounding work areas to prevent injuries to public properties. Particular emphasis must be placed on safety devices for vehicular traffic. Any work areas that may create a hazard at night shall be well lighted form sunset to sunrise with lamps or lanterns visible from all approaches. All maintenance of traffic signals must be approved by the City.

1.0.12. TRAFFIC SAFETY AND ACCESS TO PROPERTY

A. Comply with all rules and regulations of the City, state, and County authorities regarding closing or restricting the use of public streets or highways. No public or private roads shall be closed, except by express permission of the City and the controlling authority. Conduct the work to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved barricades, signs, and lights where necessary for the safety of the public. The convenience of the general public and residents and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.

B. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over. Temporary access driveways must be provided where required. Access to businesses, schools and homes along the route of the work shall always be provided by the Contractor.

C. Supply flagmen and guards or Police when they are required by regulation, when deemed necessary for safety, or required by the Engineer. Flagmen and Guards shall be furnished with approved orange wearing apparel and other regulation traffic control devices.

D. The Contractor shall be responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the

detour route) traffic control and other provisions, throughout the project as required by the City.

E. Traffic shall be maintained according to corresponding typical traffic control details. No streets shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

1.0.13. TRAFFIC CONTROL AND USE OF PUBLIC STREETS

A. The Contractor shall be responsible for traffic control as specified hereinafter. Any reference to the City, its departments, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over particular areas of streets or their departments, published regulations, permits, or data. Abide by all applicable laws, regulations and codes thereof, pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

B. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control and other provisions, throughout the project as required by the City of Opa-locka Public Works Department. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the Miami Dade County Public Works Manual. No street shall be completely blocked nor blocked more than one-half at any time, keeping the other half open for traffic without specific approval.

C. If required by the Traffic Division, employ the required number of uniformed off-duty policemen to maintain and regulate the flow of traffic through the construction area. The number of men required and the number of hours on duty necessary for the maintenance and regulation of the traffic flow shall be subject to their approval. If required for traffic control permits or agencies, the Contractor shall work odd or night hours, as required for traffic control reasons, and the cost of such work shall be considered as incidental to construction.

D. The Contractor shall provide all barricades and/or flashing warning lights necessary to warn motorist of the construction throughout the project.

E. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times. Provide necessary access to all adjacent property during construction.

F. The contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Miami Dade County Public Works Manual. In addition, provide for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, attention is directed to the fact that vehicle loop detectors may have been embedded in the pavement. Verify these locations by inspecting the site of the work and by contacting the Sunshine 811, at 1-800-432-4770, (or by submitting an internet ticket entry via www.sunshine811.com). Any loop detector which is damaged, whether shown on the plans or not, shall be repaired or replaced to the satisfaction of the Traffic Division.

H. Notify the Traffic Division 24 hours in advance of the construction date, and 48 hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed and the swale or median area restored to their previous condition.

1.0.14. WORKING IN CONFINED SPACES

A. Where a Contractor needs to work in a confined space, the Contractor must comply with the General Industry, OSHA Confined Space Standard, 29 CFR 1910.146 or the equivalent Confined Space Standard in CFR 1926, Safety and Health Regulations for Construction Standards.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01018 ENVIRONMENTAL CONTAMINATION

PART 1 – GENERAL

1.0.1. ENVIRONMENTAL CONSIDERATINOS

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP and Miami-Dade County Regulatory and Environmental Resources Department.

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both the City and other authorities with jurisdiction. The Field Health and Safety Technician furnished by the Certified Industrial Hygienist or Environmental Engineer shall be present on the site during all construction in specialized construction areas unless the nature of the work is non-hazardous such that either the Site Specific Health and Safety Plan or the Certified Industrial Hygienist or Environmental Engineer authorizes his absence.

C. Disposal of any contaminated soils and/or groundwater must comply with all applicable federal, state and local requirements.

PART 2 – PRODUCTS

2.0.1. The Engineer of Record shall consult with the City regarding its requirement for material type (including pipe, fitting, gasket, valve interior coating, and the like) to be installed in contaminated areas.

PART 3 – EXECUTION

3.0.1. INSTALLATION REQUIREMENTS

A. The requirements of this Section shall be closely adhered to in all cases where proposed mains are to be installed in an area of hydrocarbon contamination. These requirements and those imposed by Miami-Dade County Regulatory and Environmental Resources Department or any other agency having jurisdiction an addition to, and take precedence over the City's standard specifications and standard details for ductile iron mains.

B. Contaminated backfill cannot be placed back into an existing trench. Contaminated fill shall be replaced with clean fill, hauled offsite and legally disposed of at a location which can handle the material.

C. The City may require gasketed joints be protected by encasing the entire joint with a hydrocarbon impermeable material. In this case, all joint gaskets shall be protected including those on pipe, fittings, valves, fire hydrants and specialty items.

END OF SECTION

01025 MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Payment for the various items in the Schedule of Payment items, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, taxes, materials, commissions, transportation and handling, bonds, permit fees, insurance, overhead and profit, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work, all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). Such compensation shall also include payment for any loss or damages arising directly or indirectly from the work.

B. The Contractor's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Schedule of Payment items or this Section, it shall include the cost for that work in some other applicable bid item, so that its proposal for the project does reflect its total price for completing the work in its entirety.

1.0.2. SUBMITTALS

A. Informational:

1. Schedule of Values: Submit schedule on City's form.

2. Application for Payment.

3. Final Application for Payment.

B. Submittals shall be in accordance with Section 01300 “Submittals” and the City’s standards.

1.0.3. SCHEDULE OF VALUES

A. Prepare a schedule of values for the work.

B. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.

C. Lump Sum Work:

1. Reflect schedule of values format included in conformed Bid Form.

2. List Bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.

D. An unbalanced or front-end loaded schedule will not be acceptable.

E. Summation of the complete schedule of values representing all the work shall equal the Contract Price.

F. The Contractor shall submit a Schedule of Values for review with the return of the executed Agreement to the Owner. The schedule shall contain the installed value of the component parts of work for the purpose of making progress payments during the construction period.

G. The schedule shall be given in sufficient detail for proper identification of work accomplished. The Schedule of Values shall directly correlate to each activity outlined in the construction progress schedule and the construction network analysis (specified in the section entitled "Submittals") to accurately relate construction progress to the requested payment. Each item shall include its proportional share of all costs including the Contractor's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.

H. If the Contractor anticipates the need for payment for materials stored on the project site or off-site in bonded warehouse, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the work items in the Schedule of Values. Payment for stored materials shall comply with requirements of General Conditions.

1.0.4. APPLICATION FOR PAYMENT

A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.

B. Use detailed Application for Payment Form provided by the City.

C. Include accepted schedule of values for each portion of work and the unit price breakdown for the work to be paid on unit price basis, and a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.

D. Preparation:
1. Round values to nearest dollar.

2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form.

3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand as applicable, and such supporting data as may be requested by Owner.

1.0.5. MEASUREMENT—GENERAL

A. Weighing, measuring, and metering devices used to measure quantity of materials for work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

B. Whenever pay quantities of material are determined by weight, material shall be weighed on scales furnished by Contractor and certified accurate by state agency responsible. Weight or load slip shall be obtained from weigher and delivered to the City or City's representative at point of delivery of material.

C. If material is shipped by rail, car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.

D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by the City. Each vehicle shall bear a plainly legible identification mark.

E. Materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.

F. Where measurement of quantities depends on elevation of existing ground, elevations obtained during construction will be compared with those shown on drawings. Variations of 1 foot or less will be ignored, and profiles shown on drawings will be used for determining quantities.

G. Units of measure shown on Bid Form shall be as follows, unless specified otherwise. All methods of measurement shall be approved by the City.

Item	Method of Measurement
AC	Acre – Field Measure
CY	Cubic Yard – Field Measure within limits specified or shown, or measured in vehicle by volume, as specified
EA	Each – Field Count
GAL	Gallon – Field Measure
HR	Hour
LB	Pound(s) – Weight Measure by Scale
LF	Linear Foot – Field Measure
LS	Lump Sum – Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
TON	Ton – Weight Measure by Scale (2,000)

1.0.6. MEASUREMENT AND PAYMENT

A. General:

1. Payment for all the work completed under this Project shall be made in accordance with the provisions of the "Special Conditions" on the basis of the specific provisions of this section of the Specifications.

2. DUE TO ONGOING PERMITTING EFFORTS, ADDITIONAL CHANGES TO THE BID SET DRAWINGS MIGHT BE NECESSARY. THIS WILL BE INCORPORATED INTO THE CONFOMED SET DRAWINGS AND ANY ADDITIONAL EXPENSES OR COSTS FOR THE CONTRACTOR DUE TO THIS CHANGES SHALL BE REFLECTED IN ITEM NO 80 OF THE BID ITEM LIST.

3. The Contractor will be paid each month the value of the work completed during the preceding month (less retainage) and the invoiced cost including applicable sales taxes and shipping value (less retainage) of materials not already used, but which have been furnished by the Contractor under the Specifications, provided that such materials have been delivered, properly stored and inspected by the Engineer and that payment therefore has been satisfactorily certified by the Contractor to the Engineer. Remaining cost for materials (less retainage) will be paid at the same time as installation. Any payment for materials which are not used will be withheld from the final payment.

4. The Contractor shall receive and accept the compensation as provided in the Quotation, the ITB and "Invoices and Payments" of the "Special Conditions" as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the City.

5. The cost breakdown (or Schedule of Values) referred to herein is defined in "Schedule of Values" of the "Special Conditions." The cost breakdown (Schedule of Values) approved by the Engineer will be used as the basis for making progress payments and for determining the cost of extra work which is the same or similar (as determined by the Engineer) to that defined in the "Schedule of Values."

6. The prices stated in the Quotation includes full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.

7. Unless otherwise specifically stated elsewhere herein, the Contractor shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment and/or systems supplied by either the City or the Contractor and installed as a part of this Project. Further, any test materials supplied by the Contractor shall be completely satisfactory to the City. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the Engineer whose decision shall be final. Any material considered not suitable shall be immediately replaced by the Contractor with suitable material and no extra compensation will be allowed."

8. It is the intent of the City to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

9. For purposes of determining the monthly payments to be made to the Contractor for work accomplished, the value of the work completed shall be determined in the following manner:

    a. Excavation, installation of pipe, fittings, valves, catch basins, treatment structure, completed backfill, connection to existing mains and temporary paving repairs shall constitute seventy-five percent **(75%)** of the price bid for these Quotation Items.

b. Submittal of the PSM's daily progress reports and/or field book notes and monthly as-builts of the work that has been performed to date (all documents subject to approval and acceptance by the City) shall constitute ten percent **(10%)** of the price bid for these Quotation Items.

c. Completion of all sitework restoration, shall constitute five percent **(5%)** of the price bid for these Quotation Items.

d. Submittal of the final as-builts to the satisfaction of the Engineer, completion of all surface repairs, restoration of public or private facilities, appurtenances, and all other work not provided for under other Quotation Items shall constitute the remaining ten percent **(10%)** of the price bid for these Quotation Items.

B. Price Bid:

1. The price bid for each item shall be stated in both words and figures in the appropriate places in the Quotation form. All blank spaces for bid prices must be filled in with ink, or with a typewriter. The Bidder is further directed that any and all alterations, changes, corrections and modifications, made to the Quotation forms prior to submission of bids, must be initialed by the Bidder. Non-compliance by the Bidder of this directive may be grounds for rejection of his bid.

2. In the event that there is a discrepancy between the price written in words and the price written in numbers, the price written in words shall govern except where the number of units multiplied by the unit price shown in numbers equals the total price for that bid item. In such case the unit price shown in numbers shall govern over the unit price shown in words.

3. Where an error is made in the calculation of the total bid price of an item, the unit price shall govern.

4. If the bidder makes an error in his addition of the total bid prices of the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

5. It has been determined that the City is not exempt from the payment of Florida State Sales Tax under this Contract. All items of materials, equipment and supplies furnished by the Contractor and remaining a part of the completed Project are subject to this Tax. The Bidder shall include a sufficient amount of money to pay for this Tax in his bid price. Sufficient money to pay the Tax for all miscellaneous materials and minor items shown on the Plans, specified herein, or necessary for the work, and which will remain a part of the completed Project, shall also be included in the price or prices bid, and no other compensation will be provided.

C. Quotation Items:

It is intended that all work required to complete this Project will be included in the various bid items as follows:

Item No. 1

For performing preparatory work and operations in mobilizing for beginning the work of the Project, including preparation and acceptance of Maintenance of Traffic Plan (MOT), but excluding materials and permit costs, both of which are paid under other payment items, shall include, but not be limited to; preparation, submission and acceptance of the MOT, first by the City and if acceptable to the City, submission to and acceptance by all other governing authorities; supply, submission and correction of all "Pre-Approved Product Lists" and/or shop drawings; ordering the said equipment and materials in a timely fashion; those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities; the cost of reestablishing the design baseline, vertical control points and reference points, and establishing proposed pipeline location; the cost of MOT and permit preparation/submission/acceptance; the costs of bonds, required insurance and other preconstruction expense but excluding the actual cost of permits, which are paid under a separate dedicated allowance account and excluding the cost of materials which are paid under another bid item(s).

Not inclusive of the costs incurred in the provision of traffic control and the costs incurred in the provision of off-duty police officers that are to be paid for under separate Bid Items.

The mobilization item will be paid in the following manner:

Contracts with a contract duration of up to and including one hundred twenty (120) calendar days will be paid in two (2) separate payments, each equal to fifty (50) percent of the amount bid for this item.

Contracts with a contract duration of over one hundred twenty (120) calendar days will be paid in four (4) separate payments, each equal to twenty-five (25) percent of the amount bid for this item.

The two or four payments will be made with the first two or four payment draws and is conditioned upon progress satisfactory to the Engineer being made pursuant to the accepted Project.

The total amount of the partial payments may not exceed ten (10) percent of the original Subtotal of the bid items. Any remaining amount will be paid upon completion of all work on the Contract. Retainage, as specified in the "General Covenants and Conditions" and any Special Provisions will apply to these payments.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Items No. 2

For furnishing and constructing Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping the main; furnishing and installing pipe and fittings, including cutting and threading as required; gate valves; valve box and cover set in concrete; constructing concrete support slabs, installing guard post and Fire Hydrants; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 3

For demolishing and removal of damaged Fire Hydrant Assemblies for water mains as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. Such amount represents the amount the Contractor feels is necessary to completely demolish the damaged Fire Hydrant Assemblies.

Items No. 4

For adjusting rim elevation of existing water meter boxes to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 5

For adjusting rim elevation of existing water valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full

compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 6

For adjusting rim elevation of existing water ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 7 and 11

For furnishing and delivering to the City HDPE pipe and pipe fittings for sewer force main of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 8 and 12

For installing HDPE pipe and pipe fittings for sewer force mains of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the

job site (trench side) and placing them into position in the trench; installing HDPE pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Item No. 9 and 10

For making a connection to an existing sewer force main at:

NW 135th Street (STA 43+88±)

Including furnishing and installing all fittings necessary for tapping sleeve connection to existing sewer force main, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of City forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to, exploratory excavation to verify the main size; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping sleeve connecting the proposed sewer force main to the existing main; furnishing and installing any required pipe and fittings; installing solid sleeves; making thrust restrained joints; furnishing all materials and equipment required to clean and test the connection; cleaning and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with City forces; field locating utilities; protecting existing utilities; satisfying permit conditions; bypass pumping and/or sewer tankering of sewer flows interrupted during the sewer force main connection procedure, if required; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 13

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 14

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 15

For furnishing and delivering to the City HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 16

For installing HDPE plugs for sewer force main service connections, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of HDPE plugs accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each

complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing HDPE plugs valves; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to plug the sewer service connection; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 17

For furnishing and delivering to the City mechanical joint ball valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ball valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint ball valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 18

For installing mechanical joint ball valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 19

For furnishing and delivering to the City flushing valves for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of flushing valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing flushing valves; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs;

and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 20

For installing flushing valves for sewer force main, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing flushing valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 21

For furnishing and delivering to the City Automatic Air Release Valve Assemblies (AARVs) for sewer force main, valve box & lid, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of ARV valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing ARVs; furnishing valve box and lid for ball valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 22

For constructing Automatic Air Release Valve Assemblies (AARVs) for sewer force mains at the locations shown on the plans, or where directed by the Engineer in the field, complete as shown in the Plans, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; furnishing and installing automatic air release valves, corporation stops, saddles, bronze couplings, stainless steel ball valves, including cutting and threading as required, manhole frames and covers, bricks, riser pipes; transportation and handling costs; tapping the main; placing and compacting backfill; furnishing additional backfill material, if required; constructing concrete support slabs; temporary paving; permanent

paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 23

For furnishing and delivering to the City mechanical joint plug valves for sewer force main, and valve boxes & lids, complete, of the nominal sizes specified in these bid items, will be paid for at the unit price bid times the number of plug valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing mechanical joint plug valves; furnishing valve box & lid for plug valve; furnishing joint materials; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the valves; transportation and handling costs; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation. No substitution with resilient-seated gate valves allowed.

Item No. 24

For installing mechanical joint plug valves for sewer force main, manhole, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 25

For adjusting rim elevation of existing sewer valves to meet proposed grate and replace covers in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 26

For adjusting rim elevation of existing sewer ARV's to meet proposed grate and replace covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 27, 29, and 31

For furnishing and delivering to the City HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items, will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing HDPE corrugated pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eye bolts; corporation stops for testing; pipe bedding; backfill materials; temporary pavement materials; transportation and handling cost delivered ditch side; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 28, 30, 32

For installing HDPE corrugated pipe and pipe fittings for stormwater drainage of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; HDPE corrugated pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the

Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; pumper trucks; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Items No. 33

For furnishing and installing thec two (2) StormSafe Vaults model SSV40-2-000 by FABCO Industries, Inc., as specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSafe Vaults specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 34

For furnishing and installing the StormSack Plus model PSS1626-1E-000 by FABCO, specified on plans, including inner components specified by manufacturer, rim and covers in these bid items will be paid for from the unit price established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary components of the StormSack Plus specified on plans, including making all connections within the lines themselves; cleaning and testing the structure, pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in

another bid item) required for a complete and satisfactory installation, as specified by the manufacturer.

Items No. 35

For demolishing and removal of stormwater treatment structure as indicated in the plans, will be paid for from will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove the existing stormwater structure.

Items No. 36

For furnishing and delivering the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for furnishing all necessary structures specified on plans, transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 37

For installing the precast stormwater structures as specified on plans, including rim and covers in these bid items will be paid for from the aggregate sum amount established by the Contractor for this purpose, which payment shall be full compensation for installing all necessary structures specified on plans, including making all connections within the lines themselves; cleaning and testing the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of the PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Items No. 38

For repairing damaged structures for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 39

For adjusting rim elevation of existing stormwater structures to meet proposed grate and replace covers, in these bid items will be paid for from the unit price amount established by the Contractor for this purpose, which payment shall be full compensation for adjusting all necessary rims specified on plans, including excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act", cast-in-place concrete for rim adjusting; furnishing and installing rims and cover to meet proposed grate, complying with work hour restrictions; satisfying all requirements of the Project permit; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 40

For furnishing and installing reinforced concrete headwalls at stormwater outfall per FDOT index No. 250, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the headwall at the pipe outfall.

Item No. 41

For furnishing and installing rubble (Broken Stone), including necessary geotextile filter fabric, at outfall embankment for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of tons of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 42

For furnishing and installing sand-cement bags for the rip-rap installation as per FDOT Standard Specifications Manual Section No. 530, will be paid for at the unit price bid times the number of Cubic Yards of such rip-rap required as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 43

For furnishing and installing manatee grate for 36" pipe for stormwater outfall, will be paid for from the unit price amount established by the Contractor for this purpose, as directed by the Engineer in the field and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 44

For furnishing and installing 36-inch in-line check valves for sewer force main, including valve boxes, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing plug valves complete with manhole for plug valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 45

For excavating of existing backfill material at existing site location for grading for the roadway improvements along Cairo Lane and NW 127th Street, maintaining access to residences and businesses along the route of the excavation; protecting existing utilities along the route of the excavation, will be paid for at the unit price bid times the number of cubic yards removed to the satisfaction of the Engineer.

Item No. 46

For furnishing and installing additional suitable backfill material for grading for the roadway improvements along Cairo Lane and NW 127th Street, will be paid for at the unit price bid times the number of cubic yards of additional backfill furnished and installed as directed by the Engineer in the field and includes removal of loading, hauling, placing and compacting the backfill.

Item No. 47, 53, and 56

For cold milling roadway surface course for permanent pavement repairs of the nominal thickness specified in plans, will be paid for at the unit price bid times the number of square yards of such surface course milled and required as measured along the curb within the limits defined by details on the Plans and/or the City's Public Works Manual appended hereto and as approved by the Engineer. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for milling of surfaces indicated. Asphalt cold milling shall be performed using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final.

Item No. 48

For selling and delivering concrete for the installation of 8-inch Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for furnishing

concrete for the installation of Concrete Pavement, transportation and handling costs delivered ditchside. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 49

For constructing 8-inch-thick Concrete Pavement per FDOT index No. 350, will be paid for at the unit price bid times the number of cubic yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the Concrete Pavement. This bid item shall be used only at locations approved by the Engineer or indicated in the Plans where the minimum cover over the main cannot be obtained.

Item No. 50

For constructing permanent pavement repairs for roadway (nominal 3.5-inch thick machine-laid asphaltic base course surface overlay type B-12.5) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 51

For constructing permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic pavement surface overlay type SP-12.5, PG-76-22) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 52

For constructing permanent pavement repairs for roadway (nominal 1-inch thick machine-laid asphaltic friction course surface overlay type FC-12.5, PG-76-21) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation, as required and directed by the Engineer.

Item No. 54

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1-inch-thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include asphalt pavement driveways in roadways, as required and directed by the Engineer. After the pavement has been

milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 55

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 2-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 32ND Avenue, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include placement of 8-inch base material for pavement installation, as required and directed by the Engineer. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 57

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1.5-inch thick machine-laid asphaltic concrete friction surface overlay) at NW 135th Street, will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 58

For furnishing and constructing 4-inch concrete sidewalk restoration to match existing, will be paid for at the unit price bid times the number of square feet of such sidewalk required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 59

For furnishing and constructing 6-inch concrete driveway approaches to match existing, will be paid for at the unit price bid times the number of square feet of such driveway required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 60

For constructing concrete curb and gutter restoration to match existing, will be paid for at the unit price bid times the number of linear feet of such curb and gutter required and placed as measured along the curb, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Item No. 61

For furnishing and constructing concrete valley gutter, will be paid for at the unit price bid times the number of linear feet of such valley gutter required and placed as measured along the street, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Items No.62

For installing General Guardrail per FDOT index No. 536 with mechanical appurtenances required as specified in these bid items will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing General Guardrail per FDOT index No. 536; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean the item; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

Item No. 63

For furnishing and installing pavement markings as indicated in Plans, will be paid for from the aggregate sum amount bid by the Contractor for this purpose. Such amounts represent the amount the contractor feels is necessary to comply with the governing agency's requirements. Reflective Pavement Markers and signings shall also be furnished and installed under this item and there will be no additional compensation paid for this work.

Items No. 64

For demolishing and removing of existing curb and gutter of the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear feet of curb and gutter established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to completely demolish and remove median curb and gutter.

Items No. 65

For removing and disposing existing trees located at the median located at NW 32nd Avenue, as indicated in the plans, will be paid for from will be paid for at the unit price bid times the number of linear trees removed. Such amount represents the amount the Contractor feels is necessary to completely remove and disposal.

Item No. 66

For furnishing traffic control, will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to provide sufficient flagmen, signs, barricades, and similar items and work for directing traffic and maintaining safety during all times of work and other times as directed by the Engineer, the municipalities' Public Works Department and any other governing authority. Any portion of this fund remaining after all authorized payments have been made will remain with the Contractor. Conversely, no requests for additional payments will be approved.

Payment to the Contractor under this item will be by monthly percentage corresponding to the percentage of the Project's work items completed and paid for each month, as approved by the Engineer.

Items No. 67 – Dedicated Allowance

For repairing damaged Fire Hydrant Assemblies for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of assemblies repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 68 – Dedicated Allowance

For furnishing and replacing damaged Fire Hydrant Assemblies at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of damaged Fire Hydrant Assemblies replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, removal and disposal of damaged fire hydrant if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 69 – Dedicated Allowance

For furnishing and installing 6-inch mechanical joint gate valves for existing fire hydrant lines, valve box, complete, of the nominal sizes specified in these bid items, will be paid at the unit price bid price times the number of valves installed and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; transporting and unloading the valve at the installation location; installing ball

valves complete with valve box for ball valve; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning and testing; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Items No. 70 - Dedicated Allowance

For repairing damaged water meters at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Items No. 71 - Dedicated Allowance

For furnishing and replacing water meters for service connections at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of water meters replaced and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation if necessary; furnishing and installing pipe and fittings, including cutting and threading as required; installing valves and meters; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Items No. 72 - Dedicated Allowance

For repairing damaged catch basins for stormwater system at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in the Standard Details on Plans, will be paid for at the unit price bid times the number of catch basins repaired and accepted by the Engineer. The price bid shall be full compensation for each complete repair, ready for service.

Item No. 73 - Dedicated Allowance

For sheeting and shoring ordered left in place by the Engineer, will be paid for at the unit price bid per square foot, measured from tip to cut-off times the horizontal length, regardless of thickness, times the number of linear feet of sheeting and shoring left in place as accepted by the Engineer. Payment shall be full compensation for cutting off and for all salvage and potential reuse value of the material. Sheeting and shoring left in place without the Engineer's approval will be at the Contractor's expense.

Item No. 74 - Dedicated Allowance
For removal, transport, and legal disposal of above-ground debris, including tipping fees, will be paid for at the unit price bid times the number of cubic yards removed and legally disposed of, as measured by the truckload to the satisfaction of the Engineer.

Item No. 75 - Dedicated Allowance
For restoring sodded areas, will be paid at the unit price bid times the number of square yards of sod placed, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete restoration.

Item No. 76
Sum of Item Nos. 1 through 75.

Item No. 77 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of providing off-duty police officers as required for this project. Payment shall only reimburse the Contractor for the cost of the off-duty police officers for hours on duty at the work site; no overhead, travel time or other additional costs will be allowed. Any portion of this fund remaining after all authorized payments have been made will be withheld from contract payment and will remain with the City.

Item No. 78 - Dedicated Allowance
This item establishes a fund for reimbursement of the cost of all required construction permits and fees, if authorized by the Engineer. Payment shall reimburse the Contractor for only the cost of the construction permit and fee. Any question or whether a construction permit or fee is required shall be decided by the Engineer whose word shall be final. Any portion of this fund remaining after all authorized payments have been made will be withheld from Project payments and will remain with the City.

Item No. 79 - Contingency Allowance
For unforeseen conditions, minor construction changes and Quantity Adjustments, additional work not covered by other items, if ordered by the Engineer.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to unforeseen conditions, unforeseen conflicts between existing elements of work and the proposed work; for minor changes required to resolve any unforeseen conditions, Revised Regulations, Technological and Products Development, Operational Changes, Schedule Requirements, Program Interface, Emergencies and other Miscellaneous Costs; and for adjustments to estimated quantities shown on the unit prices of the Quotation to conform to actual quantities installed; and associated time related to this work only if ordered by the Engineer.

Payment to the Contractor under the Contingency Allowance will only be made for work ordered in writing by the Engineer, in accordance with Section 13 "Extra Work and Payment Therefore" of the "General Covenants and Conditions." Any portion of these accounts remaining after all authorized payments have been made will be withheld from Contract payments and will remain with the City.

A non-compensable time extension shall be included in the Contingency Allowance work when approved by the Engineer.

Item No. 80 - Contingency Allowance
Due to ongoing permitting efforts, additional changes to the bid set drawings might be necessary. This will be incorporated into the conformed set drawings, and any additional expenses or costs for the contractor due to these changes shall be reflected in this item.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to additional changes due to ongoing permitting efforts.

Item No. 81 - TOTAL BID
Sum of Item Nos. 76, 77, 78, 79, and 80.

1.0.7. NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.

2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.

3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.

4. Material not unloaded from transporting vehicle.

5. Defective work not accepted by Owner. Material remaining on hand after completion of work.

1.0.8. PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless shop drawings or preliminary operation and maintenance manuals are acceptable to the Engineer.

B. Final Payment: Will be made only for products incorporated in work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.0.9. ALLOWANCES

A. The allowances shall be used only at the discretion of and as ordered by the Owner for such items as unforeseen conditions, unforeseeable conflicts between existing elements of work and the proposed work, unit price items exceed estimated quantities, and any associated work requested by the Owner including all labor, materials, and services for modifications or extra work to complete the project that was anticipated, but not specifically included in this Contract.

B. Any portion of these allowances that remain after all authorized payments have been made will be withheld from contract payments and will remain with the Owner.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01031 GRADES, LINES AND LEVELS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work of this Section comprises the establishing of grades, lines and levels.

1.0.2. RELATED WORK

A. Section 01720 “Project Record Documents”

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Furnish all stakes, templates and other materials necessary for establishing and maintaining of the lines and grades necessary for control and construction of the work and all incidental labor necessary for the prosecution of the work.

PART 3 – EXECUTION

3.0.1. LAYOUT OF THE WORK

A. GENERAL

1. The Engineer of Record, through retaining the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida, shall furnish the Contractor with horizontal and vertical controls which shall be utilized as specified elsewhere herein to layout the work. The Professional Land Surveyor and Mapper, who is licensed in the State of Florida hired by the Contractor, shall verify all controls provided by the Engineer of Record and it shall be the responsibility of the Contractor to preserve same.

2. The Contractor shall retain the services of a Professional Land Surveyor and Mapper, who is licensed in the State of Florida who, shall furnish and set stakes, establishing line and grade and shall solely be responsible for the layout of the work as well as the recording of all as-built dimensions and elevations. The Contractor shall furnish all additional stakes, templates, and other materials for marking and maintaining survey points and lines given, and shall be responsible for their preservation. Should any of the horizontal and vertical control points set by the Engineer of Record be destroyed or disturbed, they shall be reset by the Contractor's Florida Registered Land Surveyor and Mapper, at the Contractor's expense. All control points previously set by the Engineer of Record shall be verified by the Contractor's surveyor.

B. LAYOUT

As provided in Subsection 3.01-A, above, the Contractor through the services of his Florida Registered Land Surveyor and Mapper, shall establish the line and bench mark and other reference points for the pipeline or structure, as follows:

1. Structures: Will consist of baselines, stakes at building corners, centers and centerlines, auxiliary lines and two bench marks from which to establish the elevations. The Engineer of Record shall set a minimum of three horizontal and vertical control points which shall thereafter be maintained by the Contractor, without further help from the Engineer of Record, for use in establishing and checking the lines and grades as shown on the contract drawings.

2. Pipelines: Will consist of baselines, construction lines, centerlines, auxiliary lines and bench marks from which to establish the elevations. The Engineer of Record shall set horizontal and vertical control points at the beginning and end of the work and at a minimum distance of 1,400 ft. in between. When the total distance is less than 1,400 ft. control points shall be set at the beginning and end of the work.

3. The Contractor shall use this information to construct the structures and pipelines to the lines and grades shown on the project drawings and shall supply all equipment and personnel necessary to accomplish this end.

4. For pipelines, this will consist of establishing all points of bend (but not necessarily bevel pipe unless in close proximity to other facilities), valves, tees, crosses and other stations not more than 100 feet apart along the proposed centerline of the pipe, or along a stationed offset line as shown on the plans, marked by a nail in a metal cap if in pavement, with the station painted nearby or by a nail in the top of a wooden stake driven flush with the ground with the station marked on the flag stake nearby, if not in pavement.

5. The Contractor shall supply the City Inspector with a copy of the Florida Registered Land Surveyor and Mapper's layout of the work immediately upon its availability to his own forces.

6. The Contractor shall make his equipment and men available to the Inspector for spot checking the accuracy of the pipe laying. The Inspector shall require the Contractor to correct pipe alignment when necessary.

C. RECORD DRAWINGS:

1. During the entire construction operation, the Contractor shall retain the services of a State of Florida Registered Land Surveyor and Mapper who shall maintain

records of the installation, including all deviations from the plans and specifications by obtaining "as-built" dimensions and elevations.

2. The Surveyor shall prepare Record As-Built Drawings showing correctly and accurately all changes and deviations made during construction, including approved construction variances, to reflect the work as it was actually constructed.

3. Refer to Sections 01720 and 01725 for City's criteria for developing project record documents and record As-Built drawings.

D. HORIZONTAL AND VERTICAL CONTROL FOR DESIGN

The following shall apply when establishing horizontal and vertical controls for design. They shall also be used for the development of construction drawings.

1. Survey stationing shall proceed from south to north and/or from west to east.

2. Baseline or centerline shall be tied to section corners, or to monument lines or to right of-way lines.

3. Points along the survey line shall be referenced to perpetuate the alignment. Whenever possible, the reference points shall be established at right angles to the survey line and at intervals no longer than 1,400 feet. Reference points shall be shown on construction plans.

4. Centerline of side streets shall be established and set by nail and disc. Station and angle turned shall be given and shown on the plans.

5. All curve data (horizontal) shall be shown on plans. Point of curvature and point of tangency shall be set in the field, reference P.C. and P.T. or P.I.

6. Easement lines shall be tied to baseline or centerline. Give station and angle turned.

7. Set centerline or baseline stations every 100 feet on the ground using iron rods in unpaved areas or P.K. nails on asphalt.

8. All vertical control and elevations shall be referenced to North American Vertical Datum of 1988 (NAVD 1988).

9. Temporary bench marks (T.B.M.) and bench marks shall be established throughout the project at approximately 1,000 feet intervals. Show information on plans.

10. Centerline shall be tied to baseline if different from each other.

11. Tie proposed pipe to centerline or baseline, not to right-of-way line. Right-of-way line shall be tied to centerline or baseline.

12. All survey information shall be shown on the plans.

13. All point of intersections and deflection angles shall also be shown. Angle can be submitted by bearings.

END OF SECTION

01070 ABBREVIATIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Comply wherever in these specifications' references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

B. It is the intent of the Department to obtain a complete functional, and satisfactory installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. ABBREVIATIONS AND ACRONYMS

A. The Contractor is also alerted that various "Standards" are used herein for reference and criteria, and that he should obtain copies for his general use and protection. Abbreviated titles are used throughout these Specifications and although most of them are widely known, their complete titles are given below in order to avoid any misunderstanding.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
FAC	Florida Administrative Code
FBC	Florida Building Code
FDOH	Florida Department of Health in Miami-Dade County
FDOT	State of Florida Department of Transportation
MDDTPW	Miami-Dade Department of Transportation and Public Works
NSF	NSF International
OSHA	Occupational Safety and Health Administration

B. The above list shall not be considered complete, as there are other "Standards" used; however, in most cases complete titles have been given.

C. Wherever "Standards" are indicated herein for reference, the referenced portion shall have the same force and effect as if it were included, herein, in its entirety, latest revision if the date of publication is not shown.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01090 REFERENCE STANDARDS

PART 1 – GENERAL

1.0.1. REFERENCE STANDARDS

A. Comply with the requirements of standard with date as specified herein. Standards without dates shall be understood as the Standard current at the time of bid. In case of conflict between the referenced standards, the one having the more stringent requirements shall govern.

B. In case of conflict between the referenced standards and the Project Documents, the Project Documents shall govern.

C. When no reference is made to a code, standard, or specification, the standard specifications of the ASTM, the ANSI, the ASME, the IEEE, or the NEMA shall govern.

1.0.2. QUALITY ASSURANCE

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents or applicable codes establish stricter standards.

1.0.3 ABREVIATIONS

A. Abbreviated titles for other governing standards are used throughout these specifications and although most of them are widely known, their complete titles are given below to avoid misunderstanding.

1. AA: Aluminum Association.

2. AAMA: Architectural Aluminum Manufacturer's Association.

3. AASHTO: American Association of the State Highway and Transportation Officials.

4. ACI: American Concrete Institute.

5. ACPA: American Concrete Pipe Association

6. AI: Asphalt Institute

7. AIA: American Institute of Architects AISC American Institute of Steel Construction

8. AISI: American Iron and Steel Institute

9. AITC: American Institute of Timber Construction

10. ANSI: American National Standards Institute, Inc.

11. API: American Petroleum Institute

12. ASCE: American Society of Civil Engineers

13. ASME: American Society of Mechanical Engineers

14. ASMM: Architectural Sheet Metal Manual

15. ASSE: American Society of Sanitary Engineers

16. ASTM: American Society for Testing and Materials

17. AWS: American Welding Society

18. AWWA: American Water Works Association

19. BHMA: Builders Hardware Manufacturer's Association

20. CIPRA: Cast Iron Pipe Research Association

21. CLFMI: Chain Link Fence Manufacturers Institute

22. CMA: Concrete Masonry Association

23. DIPRA: Ductile Iron Pipe Research Association

24. ETL: Environmental Test Laboratories

25. FDEP: Florida Department of Environmental Protection

26. FDOT: Florida Department of Transportation

27. IEEE: Institute of Electrical and Electronics Engineers

28. NBS: National Bureau of Standards

29. NEC: National Electrical Code

30. NEMA: National Electrical Manufacturer's Association

31. NFPA: National Fire Protection Association

32. OSHA: Occupational Safety and Health Administration

33. SSPC: Steel Structures Painting Council

34. SSPWC: Standard Specifications for Public Works Construction

35. SFWMD: South Florida Water Management District

36. UL Underwriters Laboratories, Inc.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01100 SPECIAL PROJECT REQUIREMENTS

PART 1 – GENERAL

1.0.1. RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall have at all times as his agent on the site of the work a competent superintendent capable of reading and thoroughly understanding the plans and specifications.

B. The Contractor shall be responsible for the good condition of the work or materials until formal release from his obligations under the guidelines of this project. The Contractor shall store materials and shall be responsible for and shall maintain partly or wholly finished work during the continuance of the Contract. The Contractor shall place sufficient lights and danger signals on or near the work from sunset to sunrise; shall erect suitable railings or other protective devices about unfinished work, open trenches, embankments, or other obstructions; shall provide all necessary watchmen on the work by day or by night for the safety of the public and shall take all necessary precautions for preventing accidents or injuries to persons or property in or about the work.

C. The Contractor shall be responsible for the coordination, location, and relocation of utilities, including but not limited to utility light poles, cables, fiber optic lines, water mains and services, sewer mains and services, electrical, telephone and television cables, signals and signal poles, fences, guard rails, piping, conduits and drains that interfere with the positioning of the work as set out on the drawings. The cost of all such coordination and relocations shall be included in the bid for the project and shall not result in any additional cost to the City.

D. Prior to proceeding with trench excavation, the Contractor shall contact all utility companies and all other users of the right-of-way in the area to aid in locating their underground services. It shall be the Contractor's responsibility to contact utility companies at least three NORMAL WORKING DAYs before starting construction. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground utilities may be determined.

E. Wherever piping systems or utilities such as water, wastewater, air, chemical, electrical or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the drawings. Approximate locations of known installations in the vicinity of new work must be verified in the field by the Contractor, who shall uncover them carefully, prior to commencement of the work.

F. The Contractor shall be familiar with all codes and regulations of the Federal Government, the State of Florida, Miami Dade County, the City of Opa-Locka and any municipal corporations applicable to every aspect of the project. The Contractor shall provide all materials and shall perform all work necessary to fully comply with all provisions and requirements of applicable codes and regulations whether specifically indicated in the plans and specifications or not. It is the intent of the City to obtain a finished project in full compliance with all requirements of any agencies having jurisdiction over any portion of the work involved in the project. The Inspector will not recommend acceptance of the work until all requirements and provisions of pertinent codes and regulations have been satisfactorily fulfilled.

G. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

H. Any Conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.2. LAND FOR CONSTRUCTION PURPOSES

A. The Contractor shall limit operations, temporary facilities and storage of equipment and materials to on-site areas to be designed by the Engineer.

B. Should the Contractor require additional space he/she shall make his own arrangements for storage of materials and equipment in locations off the construction site. For the allocated space, submit to the Engineer for approval, proposed plan and layout for all temporary facilities, offices, storage facilities, temporary water service and distribution, and temporary power service and distribution. Prior to commencing any new construction remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, utility systems, plantings and all other existing installations. All of these existing features shall be restored to their initial or better than initial conditions.

1.0.3. PRE – CONSTRUCTION CONFERENCE

A. After the Award of Contract and prior to the issuance of the "Notice to Proceed," a preconstruction conference will be held with the Contractor, the Department, various utility companies and others who are interested in the Project for the purpose of coordinating the work. The time and place of meeting will be set by the Engineer.

B. In some cases the preconstruction conference may be held after the start work date stated in the written "Notice to Proceed." This may be due to difficulty with coordination of all parties concerned, or other similar reasons.

C. Such delays in holding the preconstruction meeting will not relieve the Contractor of any responsibilities hereunder, and will not be an acceptable reason for him to request additional work completion time beyond that provided since he can be obtaining permits, mobilizing his equipment and forces, ordering materials, performing minor work, or other work if approved by the Engineer, during the interim period.

D. Prior to the preconstruction conference, the Contractor shall prepare the construction schedule as described in Section 01120 - Sequence of Construction and General Information and Section 01200 - Project Meetings, "Project Scheduling" and provide copies of the same to others in attendance.

E. The construction schedule shall include the place of beginning, the proposed order of progression, together with the estimated times for beginning and completing the various items of work. In addition, the Contractor shall prepare on electronic media, a critical path method (CPM) with emphasis made to "construction time and completion."

F. The Engineer will discuss requirements of such matters as project supervision and inspections, progress schedules and reports, Contract Change Orders, insurance, safety, and other items pertinent to the Project.

G. All parties to this conference should be prepared to discuss any problems anticipated with the execution of the work under this Contract.

1.0.4 SAFETY REQUIREMENTS

A. The Contractor shall comply with the Department of Labor Safety & Health Regulations for construction promulgated under the Occupational Safety & Health Act of 1970, (PL 91-596).

B. Comply with all applicable provisions of the Occupational Safety and Health Act (OSHA). The Contractor's Manual of Safety Practices, dealing with the firm's policies on field safety procedures for employees shall be submitted to the Engineer for review before Notice to proceed will be issued.

C. Conduct operations in such a manner, utilizing warning devices, such as traffic cones, barricades and warning lights, that traffic and pedestrians are given adequate warning of hazard of the work site as may be deemed necessary by the City and/or the Engineer.

D. Certain products specified in these specifications contain warnings by the manufacturer that under certain conditions, if instructions for use of the product are no followed, a hazardous condition may develop. It is the Contractor's responsibility to instruct its workmen in the safe use of the product, or any product substitution.

E. For trench excavations in excess of five feet in depth, the Contractor shall comply with the provisions of the State of Florida "Trench Safety Act".

F. The contactor shall be familiar with the “Underground Facility Damage Prevention and safety Act”, Florida Statute 556. The Contractor shall contact the Sunshine State One Call Center of Florida.

G. Do not store any environmentally hazardous materials such as solvent, greases, lubricants or any other type of chemical substances at the work sit. The Contractor is permitted to keep such materials at the site as are for immediate use only. Do not store any empty container at the site.

1.0.5 PIPE AND EXISTING UTILITIES

A. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

B. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving and similar items for which a pay item was established in the quotation, then such additional work and items will be paid for at the prices bid. Wider trench widths may be paid with the approval of the Engineer.

C. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

1.0.6 MATERIALS AND EQUIPMENT FURNISHED BY THE CITY

A. No material or equipment will be furnished by the City under this Contract. All material, labor and equipment necessary for completion of the work shall be furnished and installed by the Contractor, whether or not shown on the Plans or specifically mentioned in the Specifications.

1.0.7 WATER USED IN CONSTRUCTION

A. The City will furnish water at a charge for all construction activities unless otherwise specifically made an exception in the project specifications or specifically made an exception by the Engineer in writing.

B. Consumption for the following activities shall be determined by City personnel who shall be provided with a minimum of seventy-two (72) hour advance notification. Failure of the Contractor to provide advance notification and/or have City personnel on site to witness and verify consumption for the following activities could result in his being fined and/or a citation being issued against him in accordance with the Rules and Regulations of the City's Tampering Section.

1. Pigging:

2. Flushing, only if and when approved by the Engineer:

3. Chlorination, if applicable:

4. To fill mains being pressure tested, excluding make-up water during test: and

5. When and where directed or approved by the Engineer.

Water for construction activities listed above will be furnished from adjacent City-owned water mains or the most convenient water source. In instances where no City-owned source of water is available, the Contractor shall make his own arrangements with the municipality or other controlling authority and include the cost of all water required during construction in his overall construction cost. No reimbursement will be made.

C. Water used in construction for purposes other than those listed above, including make-up water pumped into the pipe during hydrostatic testing, will be furnished by the City at a charge. This water will be supplied from the most convenient source through the existing piping. However, all water used must be metered through a City meter. The Contractor will be billed by the City based on water usage recorded by the floating meter.

D. When the project is occurring in the City of Opa-Locka, the Contractor shall present to the City, the Fire Department Permit during application with the New Business Office.

E. All piping, fittings, valves and equipment, including pumps and power, required for handling the water shall be furnished by the Contractor. Care shall be exercised in the use of the water and provision shall be made to protect the water supply for contamination and indiscriminate use by unauthorized persons. The Contractor shall use only potable water unless otherwise specifically called out elsewhere herein and then only in the case of sewage force mains, reclaimed water mains or raw water mains.

F. Under no circumstance shall the Contractor utilize a water source, including existing piping, until such source or piping has been approved for use by the City.

1.0.8 MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR

The general requirements specified herein shall apply to all items of materials and equipment in addition to the Specifications for individual items appearing in the following sections:

A. All materials and equipment furnished by the Contractor for use in the work shall be new and of recent domestic manufacture, and shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for at least five (5) years. All components shall, wherever possible, be standard stock articles of well-known domestic manufacturers. Where the plans and specifications designate the product of a particular manufacturer, the product specified has been found suitable for the intended use, but, unless otherwise provided, articles or products of similar characteristics may be offered for the approval of the Engineer. A minimum of six copies (more if so required herein) of complete descriptive data shall be furnished regarding all articles furnished by the Contractor. The descriptive data shall consist of dimension drawings, catalog references and other information necessary to clearly identify each article. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense and shall be solely responsible for all cost and time required by any difference in construction methods, fabrication or assembly required and no additional time will be allowed. Any re-permitting together with all costs and work associated therewith shall be performed by the Contractor and no additional compensation will be allowed.

B. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. All water system components shall be in full compliance with NSF/ANSI 61, "Drinking Water System Components - Health Effects," latest revision.

D. The Contractor shall also supply certification that all materials supplied that will come into contact with drinking water conform or will conform with NSF/ANSI 61.

E. The Contractor shall care for and protect against loss or damage all material and equipment to be incorporated in the construction, whether furnished by him/her or by the City, for the duration of the Contract, and shall repair or replace any lost or damaged items. The Contractor shall be relieved of such responsibility only upon final acceptance of all of the work by the Engineer.

F. No material shall be stored so that it is in direct contact with the ground. All metal shall be thoroughly cleaned before being placed in the work. Storage and protection measures shall be subject to approval of the Engineer whose decision shall be final.

The Contractor shall immediately protect materials by different methods, materials or to a greater extent if so, directed by the Engineer in the field.

G. Unless otherwise specified or noted on the plans, all steel bolts, nuts, washers, eye bolts, tie rods and all other miscellaneous ferrous metal items shall be American made stainless steel.

H. The Contractor shall have available sufficient tools and equipment to properly perform his work in all areas of the system, including easements or other areas with limited or restricted access or clearances. The Contractor is specifically advised that work in easement may require specialized equipment to satisfactorily perform the work and the capability to accomplish these installations is a requirement of these specifications.

I. Any salvageable pipe, fitting, or other miscellaneous material or equipment, removed during construction and not reused in the work shall be cleaned, hauled to and stored by the Contractor at his expense, where directed by the Engineer, and shall remain the property of the City. All other material and equipment shall be disposed of by the Contractor at his own expense.

J. To ensure satisfactory and successful final painting of materials and equipment to be furnished, it is essential that the paints applied in the shop and in the field be mutually compatible. To this end, the Contractor shall require that the shop paints be applied to materials and equipment be compatible with the paints he proposes to use in the field or shall determine what shop paints have been used and select field paints compatible therewith, all as approved by the Engineer.

K. The Contractor shall furnish the City, with one set of any special tools required for servicing for each type of equipment actually furnished. These tools shall be delivered to the office of the City's Construction Manager, City of Opa-Locka Public Works. A letter of transmittal shall be provided, containing a list of all items being provided.

L. All other material required to complete this project shall be furnished and installed by the Contractor, whether or not shown on the plans or specifically mentioned in the specifications.

M. The Contractor shall procure extended manufacturer's warranties on equipment furnished by him. These warranties shall be kept in force and extended such that the City will be provided a manufacturer's warranty with at least one year to run beyond the date of final acceptance of the project. A copy of the warranty with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warranty/certification is delivered to the Engineer.

1. The warranty shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warranty shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

2. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warranties or certifications of warranty extensions showing the warranties to be in effect at least one year beyond the planned date of final acceptance.

3. All costs for procuring, maintaining and extending these warranties shall remain with the Contractor, even in cases where the contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

4. In instances, where the City puts an item of equipment into full productive service prior to final acceptance, the warranty shall still be extended to at least one year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warranty from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warranty cost will be reimbursed, no overhead or other costs will be allowed.

N. Extended Warranties:

1. The Contractor shall procure extended manufacturer's warrantees on equipment furnished by him. These warrantees shall be kept in force and extended such that the City will be provided a manufacturer's warrantee with at least one (1) year to run beyond the date of final acceptance of the Project. A copy of the warrantee with these provisions clearly stated or with an attached letter of certification from the manufacturer to this effect shall be delivered with the equipment and no payment or partial payment for said equipment will be made until such warrantee/certification is delivered to the Engineer.

2. The warrantee shall specifically cover the case where the equipment warranted has been replaced by a newer model. In such instance the warrantee shall either provide spare parts and service to repair or replace in its entirety the original model, or in lieu of this; provide a complete new model unit to replace the warranted and failing equipment. Should the failing equipment be replaced by a new model, the Contractor shall be responsible for making all necessary changes to adjacent

and/or connected equipment at no extra cost to the City and to the satisfaction of the Engineer whose decision shall be final.

3. As a part of final inspection, the Contractor shall deliver to the City in a form satisfactory to the Engineer, either warrantees or certifications of warrantee extensions showing the warrantees to be in effect at least one (1) year beyond the planned date of final acceptance.

4. All costs for procuring, maintaining and extending these warrantees shall remain with the Contractor, even in cases where the Contract construction time for completion has been extended. These costs shall be included in the Contractor's bid price and no further compensation will be allowed.

5. In instances where the City puts an item of equipment into full productive service prior to final acceptance, the warrantee shall still be extended to at least one (1) year past final acceptance. However, the City will reimburse the Contractor for the prorated cost of the extended warrantee from the time when the equipment was placed in full productive service to the date of final acceptance based upon the manufacturer's invoice to the Contractor for this cost. Only the warrantee cost will be reimbursed, no overhead or other costs will be allowed.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01120 SEQUENCE OF CONSTRUCTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. The sequence of construction has been divided into phases and steps representing major work areas, all of this in order to facilitate to the Contractor the execution of the project and minimize conflicts with operations. The general sequence of construction shall be as described in this Section, but also the City reserves the right to make changes on it.

B. Coordinate sequence of construction with progress schedule to ensure timely performance of the work and project completion within the specified construction time.

C. Special Instructions: It is the intent of the City to construct this project with as little disturbance and annoyance to the pump station's neighbors as possible.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City.

E. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

F. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

1.0.2 GENERAL

A. Following receipt of "Notice to Proceed" with the work, the Contractor shall notify the Engineer at least five (5) days before he is ready to start actual construction, to allow the City time to make arrangements for inspection of the work.

B. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipe location in accordance with Section

02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”, Construction Methods.

C. The Contractor's equipment must be in first class operating condition, including safety features, proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment.

D. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City.

E. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

F. All items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a completed Project.

G. Water in the trench shall be kept below the level of the pipe to prevent the entry of debris and contaminants into the pipe.

    1. In instances where Section 02220 – Excavation, General, "Alternate Method of Construction" is approved by the Engineer and used for the Project: During construction, the Contractor shall install a temporary plug, or other means approved by the Engineer, on the open end of the pipe in order to prevent debris and trench water backwash from entering the pipe during trench excavation ahead of the installed pipe. The plug shall remain in place until the following length of pipe is ready to be installed. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

H. No separate payment shall be made for the cost of labor and materials required for the removal of nightcaps, plugs, bulkheads or external blocking and bracing of adjacent mains, for the supplying of water for cleaning and testing, nor for the interconnecting work to adjacent mains unless listed separately in the Quotation, and the cost of this work shall be included in other applicable items of work.

I. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer in writing, no extension of Project time will be allowed due to such a shutdown. If any extension of time is allowed, it will be of a non-

compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

J. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours effects the work of the Contractor, the Contractor's sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

K. New or altered potable water mains, including services, that will be under City control and have an inside diameter of three inches or larger shall be disinfected and bacteriologically evaluated in accordance with FAC Rule 62-555.340. Note that the above requirements are minimum, and the City may require more stringent procedures and routinely requires all services of whatever size be tested and disinfected along with the main. These more stringent or extensive requirements shall be performed by the Contractor and no extra compensation will be allowed.

L. All pipe and fittings installed under this project shall be color coded or marked as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water and green as the predominant color for sanitary sewage facilities. Underground metal or concrete pipe shall have colored stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Striping shall be continuous and run the full length of the pipe. Aboveground pipe shall be painted shall be color coded or marked like underground pipe.

M. The Contractor shall take steps to provide accessibility for local traffic. The construction in this area shall proceed as quickly as possible and paving shall follow immediately to reduce inconvenience to residents in this area of the project.

N. The Contractor shall take pictures of the work site, in accordance with Section 01380 "Construction Photographs," prior to the start of any construction.

O. The Contractor is advised that, during the construction of the Project, the Construction Manager may require the Contractor to adjust the location of the proposed valves. This relocation(s) shall be performed at no additional cost to the City.

P. Locations of solid sleeves are for general information only. Exact location of solid sleeves shall be determined in the field by the Engineer. Prior to installation of solid sleeves, the pipe and fittings shall be hosed and kept clean, then swabbed with disinfectant as necessary for water main installation. Water in trench shall be kept below the pipe invert.

1.0.3 EXISTING WATER MAINS AND FORCE MAINS

A. The existing mains in the project area shall remain in service until the new mains are placed in service. Connections and disconnections together with cut, plug and abandonment work shall be coordinated through the City's Construction Manager. In all instances, the City's Construction Manager shall, beginning with the Preconstruction Meeting, coordinate with the Operations Division to pre-determine the notification lead times required for various operations.

1.0.4 SEQUENCE OF WORK

A. The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started**. The City reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

B. CAPITALIZED ITEMS INDICATE WORK OR FUNCTIONS TO BE PERFORMED BY CITY FORCES. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

1. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.

2. Contractor's operations involving plugging existing mains shall include:

a. Excavate existing main and verify its conditions including outside diameter, material and elevation.

b. Coordinate with the City for proper flow diversion

3. Cleaning of the main with a pig.

   a. Openings shall be left in the main to allow for the cleaning of the main with a pig.

   b. The pigging of the main shall be done before the installation of valves.

4. Installation of valves, bends, solid sleeves, air release valves, flushing valve outlets. However, they shall be constructed in sequence with the installation of the pipelines as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

5. Installation of precast stormwater catch basins for the installation of the stormwater system pipe.

6. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 01340 "Shop Drawings, Product Data and Samples" Obtain all pipe, fittings and appurtenant items to begin the work.

7. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to <u>any</u> excavation. Locate all utilities along the route of the Project.

8. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 02314 “Excavation, Backfill and Fill for Structural Facilities and Utility Systems - Construction Methods."

9. After items 7 and 8 are completed, the Contractor shall meet with the City Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.

10. **CONTRACTOR SHALL APPLY, PROCESS AND OBTAIN A RER-DERM CLASS V DEWATERING PERMIT BEFORE THE BEGINNING OF CONSTRUCTION.**

11. **CONTRACTOR TO GUARANTEE ACCESS TO BUSINESSES AT ALL TIMES.**

12. **ALL CONSTRUCTION WORK SHALL BE PERFORMED ONLY AT NIGHT TIME.**

13. The general sequence of work shall be as follows:

1) <u>Phase I – Mobilization</u>

Step – 1 Initiate mobilization. The Contractor shall set up storage, staging and parking areas, temporary environmental controls and tree protection devices in the project site. Obtain permits, develop and submit construction schedule and start shop drawing submittal. Contractor shall allow access to the other facilities within the project area, including adjacent businesses and homes at all times during construction.

Step – 2 Call for locates (Sunshine 811) and document all location marks in the field.

Step – 3 Contractor shall include the necessary provisions to safeguard the existing utilities noted within the project area. Furthermore, the Contractor shall be advised that the utilities shown on plans are based on best available information and shall take all necessary precautions to confirm, identify, preserve, and maintain the integrity while performing construction.

Step – 4 Contractor shall **immediately** open a dialog with all existing utilities in the project area. Contractor shall notify Engineer of any utility relocation requirements and costs. Utility relocations shall be reimbursed under a dedicated allowance account. Failure to properly coordinate any required utility relocations may result in delays for which the Contractor may be liable for.

Step – 5 Verify locations, elevations, dimensions, manufacturer of pipes, equipment, etc., before ordering materials to complete the work in accordance with the Contract Documents, Shop Drawings and field conditions.

Step – 6 Upon approval of shop drawings, order long lead items so that materials may be delivered in a timely fashion without delays to construction.

2) Phase II – NW 127th Street Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At NW 127th Street

At STA.53+90±:
Begin construction, excavate and install the fire hydrant assembly #1 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 2 At NW 127th Street

At STA.56+90±:

Excavate and install fire hydrant assembly #2 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 3 At, NW 127th Street,

At STA. 60+15±:
Excavate and rehabilitate stormwater structure S-27, as indicated in Plans.

Step – 4 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin A, as per indicated in Plans.

Step – 5 At NW 127th Street,

At STA. 60+15±:
Begin construction, install the precast catch basin B, as per indicated in Plans.

Step – 6 At NW 127th Street,

At STA. 60+15±:
Install 24-inch HDPE corrugated pipe between catch basins A and B, as indicated in plans, and clean the pipe.

Step – 7 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 40, as per indicated in Plans.

Step – 8 At NW 127th Street,

At STA. 69+45±:
Install the precast catch basin 41, as per indicated in Plans.

Step – 9 At NW 127th Street,

At STA. 60+15±:
Install 18-inch HDPE corrugated pipe between catch basins 40 and 41 and between catch basin 41 and S-32, as indicated in plans, and clean the pipe.

Step – 10 At NW 127th Street,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 11 At NW 127th Street,

Adjust rim elevations of existing water meter assemblies and valves to meet proposed grate, as indicated in Plans.

Step – 12 At NW 127th Street,

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 13 At NW 127th Street,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 14 At NW 127th Street,

Lay new concrete curb and gutter and sidewalk.

Step – 15 At NW 127th Street,

Paint roadway pavement markings.

3) Phase III – NW 32nd Ave Modifications

NOTE: Refer to Cairo Lane and NW 127th Street Drainage and Roadway Reconstruction Drawings.

Step – 1 Remove existing trees

Step – 2 Modify Existing median as indicated in Plans

Step – 3 Mill and resurface top 1" surface course of roadway.

Step – 4 Lay new concrete curb and gutter and sidewalk.'

Step – 5 Paint roadway pavement markings and remove temporary construction signage.

4) Phase V – Cairo Lane Improvements

NOTE: Refer to Cairo Lane and NW 127th Street Sewer, Water, Drainage and Roadway Reconstruction Drawings.

Step – 1 At Cairo Lane,

Install concrete headwalls at stormwater system outfall, as indicated in Plans.

Step – 2 At Cairo Lane,

Install Rubble Stone and sand-cement embankment stabilization.

Step – 3 At Cairo Lane,

Install guardrail

Step – 4 At Cairo Lane,

At STA. 10+10±
Install Stormsafe Vault, as indicated in Plans.

Step – 5 At Cairo Lane,

At STA. 10+10±
Install drainage manholes S-34, S-35 S-36 S-37 S-38 S-39 and interconnecting 24-inch HDPE drainage pipe as indicated in Plans.

Step – 6 At Cairo Lane,

At STA. 10+49.81±:
Rehabilitate stormwater structures S-2 and S-3, as indicated in Plans.

Step – 15 At Cairo Lane

At STA. 10+36.14±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 16 At Cairo Lane

At STA. 11+49.32±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

At STA. 12+38.96±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 18 At Cairo Lane

At STA. 12+85.40±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 19 At Cairo Lane

At STA. 14+09.55±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 20 At Cairo Lane

At STA. 16+29.36±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 21 At Cairo Lane

At STA.16+48.80±:
Begin construction, install the fire hydrant assembly #8 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 22 At Cairo Lane

At STA. 17+17.51±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 17+37.10±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 18+16.42±:
Install the 2” HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 17 At Cairo Lane

From STA. 17+00± to STA. 19+49.55±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-8 and S-10, as indicated in plans, and clean the pipe.

Step – 18 At Cairo Lane

From STA. 19+49.55± to STA. 21+50.97±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-10 and S-12, as indicated in plans, and clean the pipe.

Step – 19 At Cairo Lane,

From STA. 21+50.97± to STA. 25+58.16±:
Install 24-inch HDPE corrugated drainage pipe between stormwater structure S-12 and S-14, as indicated in plans, and clean the pipe.

Step – 21 At Cairo Lane

At STA. 20+54.23±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 22 At Cairo Lane

At STA. 22+13.28±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 23 At Cairo Lane

At STA. 24+37.21±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 24 At Cairo Lane

At STA. 24+83.56±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 26 At Cairo Lane

At STA.25+92.41±:
Install fire hydrant assembly #11 including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 27 At Cairo Lane,

From STA. 25+58.16± to STA. 28+10.26±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-14 and S-16, as indicated in plans, and clean the pipe.

Step – 28 At Cairo Lane,

At STA. 28+10.26±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-15 and S-16, as indicated in plans, and clean the pipe.

Step – 29 At Cairo Lane

At STA.28+90.83±:
Demolish existing fire hydrant #12 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 30 At Cairo Lane

From STA. 28+10.26± to STA. 32+00.44±:
Install 24-inch HDPE corrugated pipe between stormwater structure S-16 and S-18, as indicated in plans, and clean the pipe.

Step – 30 At Cairo Lane

At STA. 27+49.73±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 31 At Cairo Lane

At STA. 29+16.67±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane

At STA. 30+71.58±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 33 At Cairo Lane

At STA. 32+35.43±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 32 At Cairo Lane,

From STA. 32+00.44± to STA. 34+71.03±:
Install 18-inch HDPE corrugated pipe between stormwater structure S-18 and S-20, as indicated in plans, and clean the pipe.

Step – 33 At Cairo Lane,

At STA. 34+71.03±:
Install 15-inch HDPE corrugated pipe between stormwater structure S-19 and S-20, as indicated in plans, and clean the pipe.

Step – 34 At Cairo Lane

At STA. 34+79.93±:
Install the 2" HDPE sewer service connection pipe including ball valve and plug, as indicated in Plans.

Step – 35 At Cairo Lane

At STA.35+39.98±:
Demolish existing fire hydrant #13 a replace with new fire hydrant assembly including pipe, bollards and valves, as indicated in Plans and Standard Details.

Step – 37 At Cairo Lane,

Adjust rim elevations of existing stormwater structures to meet proposed grate, as indicated in Plans.

Step – 38 At Cairo Lane,

Adjust rim elevations of existing water meters and valves to meet proposed grate, as indicated in Plans.

Step – 39 At Cairo Lane,

Adjust rim elevations of existing sewer valves and boxes to meet proposed grate, as indicated in Plans.

Step – 41 At Cairo Lane

Backfill pipe trenches and meet proposed grate of surface, according to Plans.

Step – 42 At Cairo Lane,

Form and pour the 8" thick concrete pavement surface as indicated in Plans.

Step – 43 At Cairo Lane,

Lay new concrete curb and gutter and sidewalk.

Step – 44 At Cairo Lane,

Paint roadway pavement markings.

5) Phase VI – Force Main Installation along NW 135th Street

NOTE: Refer to Cairo Lane and NW 127th Street Sewer Drawings.

Step – 1 At Cairo Lane

At STA. 34+95.18±:
Connect to existing 3-inch HDPE force main with 3-inch dresser coupling style 38 or approved equal.

Step – 2 At Cairo Lane

From STA. 34+97.18 to STA.35+59.60±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 3 At Cairo Lane

At STA. 35+59.60±:
Install a vertical 45-inch bend to lower pipe and avoid conflict existing utilities.

Step – 4 At Cairo Lane

From STA. 35+62.78± to STA. 35+85.38±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 5 At Cairo Lane

At STA. 35+85.38±:
Install a vertical 45-inch bend to raise pipe to minimum cover.

Step – 6 At Cairo Lane

From STA. 35+88.58 to STA.36+43.88±:
Install 3-inch HDPE pipe, clean the pipe, install temporary plugs and pressure test the installation.

Step – 7 At NW 135th Street

At STA.36+43.88±:
Excavate existing 16-inch force main, Connect to the existing FM using a 16"x3" tapping sleeve connection assembly with the corresponding valves, as per Miami Dade County Standard 17.0 SS. Pressure test the cross connection assembly and valves before and after installation.

Step – 8 Backfill trench, repair roadway and curbing, access roadway within project site, asphalt areas as required.

Step – 9 Restore project site to pre-existing conditions, as applicable.

6) Phase VII – Final Sitework and Project Closeout

Step 2 – Demobilization and related closeout activities shall be in accordance with section 01700 "Project Closeout".

Step 3 – Restore project site to pre-existing conditions, as applicable.

Step 4 – Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection and cleanup.

D. The Contractor's equipment must be in first class operating condition, including proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment. The Contractor shall provide a temporary electric service for his electric equipment as specified herein below, and shall pay all cost thereof, including all charges for electricity used during the entire course of the project until its acceptance by the City. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the City. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

END OF SECTION

01200 PROJECT MEETINGS

PART 1 – GENERAL

1.0.1. PROJECT SCHEDULES

A. General: Develop and submit for approval by the City a construction progress schedule and phasing plan demonstrating complete fulfillment of all Contract requirements including all activities of Subcontractors, equipment vendors and suppliers. Unless otherwise directed by the Engineer, the construction progress schedule shall be computer developed and maintained using Microsoft Project software as manufactured by Microsoft Corporation, Primavera, or equal. The Contractor shall prepare a network plan utilizing CPM (Critical Path Method). The City reserves the right to request progress schedule on magnetic media.

B. Submittal: The progress schedule shall be plotted on 11-inch by 17-inch paper and shall be reviewed and updated monthly, depicting progress through the last day of the current month and scheduled progress through completion. Six up to date copies of the schedule shall be submitted along with the application for monthly progress payments for the same period.

1. Immediately after award of contract, submit for review the progress schedule describing the activities to be accomplished and their dependency relationships, showing starting and completion dates for each activity in terms of the number of days after receipt of Notice to Proceed. All completion dates shown shall be within the period specified for contract completion.

2. After receipt and initial review, the Engineer will meet with the Contractor for joint review, correction or adjustment of the proposed plan and schedule. Within five (5) calendar days after the joint review, the Contractor shall revise the schedule in accordance with agreements reached during the joint review and shall submit two copies of the revised schedule. After the Contractor has received both the Notice to Proceed and the approved copy of the schedule, he shall immediately add calendar dates in lieu of the number of days from the date of Notice to Proceed and shall furnish two copies of the revised schedule to the Engineer.

C. Schedule Requirements:

1. Show the sequence and interdependence of activities required for complete performance. In preparing the schedule, break up the work into activities of a duration of no longer than fifteen working days each, except as to non-construction activities (such as procurement of materials, delivery of equipment and concrete curing) and any other activities for which the Engineer may approve the showing of longer duration. The schedule shall show the activities for actual construction

work for each trade category of the project. The Contractor is to include a schedule of submittals of shop drawings, equipment schedules, coordination drawings, templates, fabrication, delivery and the like, and review and approval of shop drawings. Activities related to a specific physical area of the project shall be grouped on the schedule for ease of understanding and simplification. Activity duration (i.e. the single best estimate, considering the scope of the activity, and the resources planned for the activity) shall be shown on each activity on the diagram. To the extent that the schedule or any revised schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the City's approval of the schedule.

2. Include a cost estimate for each activity which cumulatively equals the total Contract cost. Estimated overhead and profit shall be prorated throughout all activities. The partial payments as defined under the General Conditions will be based on these approved activity costs.

3. With each request for a partial payment, submit a copy of the approved schedule marked to show the activities completed and partially completed, for which payment is requested.

4. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer In writing, no extension of Project will be allowed due to such a shutdown. If any extension of time is allowed, it will be a non-compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.

5. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the City. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours affects the work of the Contractor, the Contractor’s sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.

1.0.2. PROGRESS MEETINGS

A. General progress meetings will be held once each week at which every entity then involved in the planning, coordination and performance of work shall be discussed. The progress of each element of current work shall be discussed as to whether it is ahead of schedule, on time or behind time in relation to the updated progress schedule. For each meeting, the Contractor shall prepare a detailed three (3) week "look ahead" schedule in addition to, showing the progress schedule of the previous week. Methods to expedite behind-time work shall be determined, and commitments secured for bringing back to the scheduled date for the entities involved. Everything of significance which could affect the progress of the work, including schedule revisions, shall be discussed to ensure that current and subsequent work will be completed within the Contract time. Within three days after each meeting, copies of the minutes of the meeting, including a brief summary of progress of the work since the previous meeting, shall be distributed to each present or who should have been present. Whenever revisions to the progress schedule have been made or recognized at the progress meeting, a copy of the revised schedule shall accompany the minutes distributed.

B. Each computer-generated construction progress schedule and report shall include the following minimum items:

1. Activity Numbers.
2. Duration Estimate.
3. Activity Description.
4. Early Start Date (Calendar Dated).
5. Early Finish Date (Calendar Dated).
6. Latest Allowable Start Date (Calendar Dated).
7. Latest Allowable Finish Date (Calendar Dated).
8. Status (whether critical).
9. Estimated Cost of The Activity.
10. Total Float and Free Float.

C. In addition, each construction progress schedule, network analysis and report shall be prefaced with the following summary data:

1. Contract Name and Number.

2. Contractor's Name.

3. Contract Duration.

4. Contract Schedule.

5. The Effective or Starting Date of The Schedule (the date indicated in the Notice-to-Proceed).

D. The workday to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays, adverse weather and all other special requirements of the work. Normal work hours are Monday thru Friday, 7:30 am to 4:30 pm.

E. If the Contractor desires to make changes in the method of operating which affects the construction progress schedule and related items, he/she shall notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer accepts these changes, in writing, the Contractor shall revise and submit, without additional cost to the City, all of the affected portions of the construction progress schedule, and associated reports. The construction progress schedule and related items shall be adjusted by the Contractor only after prior acceptance, in writing by the Engineer. Adjustments may consist of changing portions of the activity sequence, activity durations, division of activities, or other adjustments as may be required. The addition of extraneous, non-work activities and activities which add restraints to the construction progress schedule shall not be accepted.

F. Except where earlier completions are specified, schedule dates which show completion of all work prior to the contract completion date shall, in no event, be the basis for claim for delay against the City by the Contractor.

G. Construction progress schedules and related items which contain activities showing negative float or which extend beyond the contract completion date will not be accepted by the Engineer. Whenever it becomes apparent from the current construction progress schedule and associated reports that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the Engineer, the Contractor shall take some or all of the following actions at no additional cost to the City. They shall submit to the Engineer for approval, a written statement of the steps they intend to take to remove or arrest the delay to the critical path in the current construction progress schedule.

1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.

2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.

3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.

H. If when so requested by the Engineer, the Contractor should fail to submit a written statement of the steps they intend to take or should fail to take such steps as reviewed and accepted in writing by the Engineer, the Engineer may direct the Contractor to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the current construction progress schedule, and the Contractor shall promptly provide such level of effort at no additional cost to the City.

I. If the completion of any activity, whether or not critical, falls more than 100 percent behind its previously scheduled and accepted duration, the Contractor shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.

J. Shop drawings which are not approved on the first submittal or within the time scheduled, and equipment which does not pass the specified tests and certifications shall be immediately rescheduled.

K. The contract time will be adjusted only in accordance with the General Requirement and other portions of the Contract Documents as may be applicable. If the Engineer finds that the Contractor is entitled to any extension of the contract completion date, the Engineer's determination as to the total number of days extension shall be based upon the current construction progress schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule and related items. Actual delays in activities which, according to the construction progress schedule, do not affect any contract completion date will not be the basis for a change therein.

L. From time to time it may be necessary for the contract schedule of completion time to be adjusted by the City in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. Under such conditions, the Engineer will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions, and the Contractor shall revise the construction progress schedule and related items accordingly, at no additional cost to the City.

M. Available float time may be used by the City through the City's Engineer.

N. The City controls the float time and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates the City may initiate changes that absorb float time only. City initiated changes that affect the critical path on the network diagram shall be the sole grounds for extending the completion dates. Contractor-initiated changes that encroach on the float time may be accomplished only with the City's concurrence. Such changes, however, shall give way to City-initiated changes competing for the same float time.

O. To the extent that the construction project schedule, or associated report or any revision thereof shows anything not jointly agreed upon or fails to shown anything jointly agreed upon, it shall not be deemed to have been accepted by the Engineer. Failure to include on a schedule any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the review of the schedule by the Engineer

P. Review and acceptance of the construction progress schedule, and related reports, by the Engineer is advisory only and shall not relieve the Contractor of the responsibility for accomplishing the work within the contract completion date. Omissions and errors in the construction progress schedule, and related reports shall not excuse performance less than that required by the Contract and in no way make the Engineer an insurer of the Contractor's success or liable for time or cost overruns flowing from any shortcomings in the construction progress schedule, and related reports.

Q. The Contractor shall present and discuss the proposed schedule at the preconstruction conference.

R. The construction progress schedule shall be based upon the precedence diagramming method of scheduling and shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the work and identifying all construction activities included but not limited to yard piping, all structures and treatment units and all related work specified herein to be performed under the Contract. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the work in order to complete the project within the contract time. The project critical path shall be clearly identified.

1.0.3. DAILY REPORTS

A. Prepare and submit to the Engineer at regular intervals not exceeding weekly intervals, a daily report recording information concerning events at the site. The daily reports shall contain the following and any other significant information:

1. General weather conditions, rain, high/low temperatures.

2. List of Subcontractors on site.

3. List of separate Contractors at the site, if any.
4. Meetings and significant decisions.
5. Stoppages, delays, shortages, losses.
6. Emergency procedures, field orders.
7. Orders/requests by governing authorities.
8. Other events or activities.
9. Partial completions.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01300 SUBMITTALS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, materials, reinforcing steel, fabricated items, and piping and conduit details. The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

B. The Contractor shall submit copies of all permit applications, permit submittals, permit comments and permit approvals.

C. Within 10 calendar days after Notice to Proceed, Contractor shall submit a complete list of all anticipated submittals including shop drawings, submittals, and product data with an anticipated delivery date to the Engineer and review and approval times. This shall be reviewed during the Project Kickoff Meeting and shall be continuously updated and reviewed during Project Progress Meetings.

1.0.2. CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Engineer in each case where his submittal may affect the work of another Contractor or the Owner. The Contractor shall coordinate submittals among its Subcontractors and suppliers including those submittals complying with unit responsibility requirements.

B. Record Drawings: Refer to Section 01720 "Project Record Drawings".

C. As-Built Record Drawings: Refer to Section 01725 "As-Built Record Drawings".

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01340 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Before proceeding with the erection of the construction plan, including the setting or placing thereof, and the erection of other temporary structures, the Contractor shall furnish the Engineer with such information and plans as the City may require.

B. Shop Drawings (including Pre-Approved Product List submittals) shall be submitted prior to any project construction activity. In a timely fashion, well before the contemplated ordering for fabrication of special order or long-lead items or construction use of any standard element of the work, the Contractor shall furnish Shop Drawings for the review and approval of the City.

C. It is the Contractor's sole responsibility, upon the first occasion of submittal of a particular element of the work, to submit Shop Drawings of an element which match and fulfill the requirements and intent of the plans and specifications. Any delays or costs caused, either directly or indirectly, by non-timely submissions; submission of items differing significantly from the intent of the plans and/or specifications; repeated submission of, or argument over, rejected elements or changes required for acceptance; arguments with the criteria or requirements of the plans or specifications; or any other such similar activities shall be at the expense of the Contractor.

D. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

1.0.2. DESCRIPTION OF WORK

A. It is the intent of the Contract Documents that the Contractor shall, in the first instance, submit Shop Drawings of elements which meet or exceed the requirements of the Contract Documents and fit with the other elements of the work and the existing conditions. Delays or the inability to obtain shop drawing approval may subject the Contractor to costs for liquidated or actual damages as specified in the Contract.

B. After award of the project, the Contractor may begin providing submittals for approval. Submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop

Drawings and providing materials, equipment, etc., fully in accordance with the specifications. This procedure is required in order to expedite final review of Shop Drawings.

C. Maintain an accurate updated Shop Drawing submittal log which shall include the following items:

1. Submittal Description and Number Assigned.

2. Specification Section.

3. Plans Sheet Number.

4. Date to Engineer.

5. Date Returned to Contractor (from Engineer).

6. Status of Submittal (Approved, Approved as Noted, Rejected/Resubmit).

7. Date of Resubmittal and Return (as Applicable).

8. Date Material Release (for Fabrication).

9. Projected Date of Fabrication.

10. Projected Date of Delivery to site.

11. Status of O & M Manuals Submittal.

1.0.3. CONTRACTOR'S RESPONSIBILITY

A. Furnish the Engineer with a schedule of Shop Drawings submittals, fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

B. Submit to the Engineer all plans and schedules sufficiently in advance of construction requirements to provide maximum time for checking and appropriate action from the time the Engineer receive them.

C. It is the duty of the Contractor to check and approve all plans, data and samples prepared by or for him/her before submitting them to the Engineer for review. Each and every copy of the plans and data shall bear Contractor's stamp showing that they have been checked and approved. Shop Drawings submitted to the Engineer without the Contractor's stamp and approval shall be returned to the Contractor for

conformance with this requirement before Engineer's review. ***Shop Drawings shall indicate any deviations in the submittal from requirements of the Project Documents and the Contractor shall state the reason why a deviation is required.***

D. All submittals shall be accompanied by a submittal registry and transmittal letter containing the following information:

1. Date.

2. Project Title and Number.

3. Contractor's name and address.

4. The number of each Shop Drawing, Data, and Sample submitted.

5. Notification of Deviations from Project Documents.

6. Submittal Log Number conforming to and referring to Specification Section Number.

7. Contractor signature or of its authorized representative.

E. Submit seven copies of Shop Drawings and of descriptive or product data submittals necessary to complement Shop Drawing. The Engineer will retain five sets.

F. After receiving approval by the Engineer, the Contractor shall be responsible for submitting the Shop Drawings to the City. Shop Drawings of all premanufactured items and all other Shop Drawings are required to obtain approval prior to manufacturing or installing the submitted items. The Contractor shall also be responsible for contesting any interpretations by the City that considers non-acceptable. The Contractor shall include in the bid prices, all costs for permits, fees and expenses associated with the submittals, including resubmittals (if any) of Shop Drawings to the City.

G. Do not begin any of the work covered by a drawing, data, or a sample returned as “Rejected/Resubmit” until a revision or correction thereof has been reviewed and returned to the Contractor, by the Engineer, with approval or approval “As Noted”. Be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to receiving Engineer's approval or approval “As Noted” of the necessary Shop Drawings.

H. Be fully responsible for observing the need for and for making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment the Contractor proposes to supply, both as they

pertain to the Contractor's own work, work of others, or of other Divisions herein or Trades and clearly show such changes on the Shop Drawings.

I. When substitutions in materials or equipment are allowed, the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense.

J. When substitutions in materials or equipment are allowed, the Contractor shall be solely responsible for all costs and time required by any differences in construction methods, fabrication or assembly required and no additional time will be allowed.

K. Determine and verify:

1. Field measurements.

2. Field construction criteria.

3. Catalog numbers and similar data.

4. Conformance with specifications.

5. That installation and maintenance clearances are sufficient particularly when equipment or arrangement changes have been made.

1.0.4. ENGINEER'S REVIEW OF SHOP DRAWINGS

A. Engineer's review of plans, data and samples, submitted by the Contractor will cover only general conformity to the drawing and specifications. The Engineer's review will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown. The review of plans and schedules will be general, and shall not be construed:

1. As permitting any departure from the Contract requirements.

2. As relieving the Contractor of responsibility for any errors, including detail, dimensions, and materials.

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

B. Variations:

1. If the plans or schedules, as submitted, describe variations per paragraph 1.03 C, and show a departure from the Contract requirements which Engineer finds to be in the interest of the City and to be so minor as not to involve a change in Contract price or time for performance, the Engineer may return the reviewed plans without noting an exception.

2. If the plans or schedules, as submitted, describe variations and show a departure from the Contract requirements which the Engineer finds to be minor enough to be corrected by redlining the submittal, the Engineer will mark and return the submittal marked "Approved as Noted." The redlined corrections shall be as binding on the Contractor as would be a resubmission embodying the same corrections.

C. When reviewed by the Engineer, each of the Shop Drawings shall be stamped and dated to indicate it had been reviewed. Shop Drawings stamped "Revise and Resubmit" and with required corrections shown will be returned to the Contractor for correction and resubmittal.

D. If the Contractor considers any correction indicated on the Shop Drawings to constitute a change to the project plans or specifications, the Contractor shall give written notice thereof to the Engineer who will render a decision which shall be final. After the decision has been made, the Contractor shall without delay, provide the corrections to the plans.

E. When the Shop Drawings have been approved by the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

F. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for resubmittal.

1.0.5. SHOP DRAWINGS

A. Shop drawings shall be of such character that they may be used as fabrication drawings. Prior to submission, the Contractor shall thoroughly check such drawings, satisfying himself that they meet the requirements of the Plans and Specifications and that they are coordinated with the arrangements set forth on other shop drawings, and shall place on them the Project Number, the date and his signature and stamp of approval. Where items for which shop drawings are submitted are to meet special conditions listed in the detailed Specifications, the conditions shall be so noted on the drawing. Where there is a deviation from the Specifications, the Contractor shall note it and state the reason why a deviation is required. Two copies will be returned to the Contractor with the Engineer's mark of approval thereon, or will be marked to indicate changes necessary to effect compliance with the Specifications and the remaining copies will be retained by the City. When shop drawings are approved by the Engineer, they shall be as binding as any of the Contract Documents. Any errors or omissions on the shop drawings shall not relieve the Contractor of his responsibility.

He shall correct such errors, or omissions, including any necessary additions or alterations to construction, at his expense upon notification by the Engineer.

B. Shop drawings submitted without the required approval as specified above shall be returned without review and no extension of time will be granted for any delays caused by such improper submission.

C. The approval of shop drawings and data will be general, and shall mean that upon examination of the shop drawings, no variations from the Contract requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined under the Contract.

D. When used in the Project Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the project. These Shop Drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance/test data shall be considered only as supportive to required Shop Drawings as defined above.

E. Manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Information which is not applicable to the work shall be deleted by striking or cross hatching.

F. If plans show variations from Contract requirements because of standard shop practice or for other reasons, describe such variations in the letter of transmittal. If no explanation of these variations is provided, the Contractor shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such plans have been reviewed and approved.

G. For all mechanical and electrical equipment furnished, provide a list including the equipment name, address of and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

H. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required Shop Drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five years, unless otherwise specified. Manufacturers and/or equipment which fails to meet the specified experience period will be considered if the manufacturer or supplier provides a bond or cash deposit which will guarantee replacement of the equipment or process in the event of failure or unsatisfactory service.

I. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.

1.0.6. REQUIRED INFORMATION

A. Submit, as applicable, the following for all prefabricated or manufactured structural, mechanical, electrical, plumbing, process system, and equipment work:

1. Shop Drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.

2. Catalog information and cuts.

3. Installation or placing plans for equipment, drives, and bases.

4. Supporting calculations, signed and sealed by a Florida Registered Engineer when required, for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers.

5. Signed and sealed calculations and plans by in-house Florida Registered Professional Engineer for structural systems, indicating compliance to the structural design criteria specified in the plans.

6. Complete manufacturer's specifications, including materials description and paint system.

7. Performance data and pump curves.

8. Suggested spare parts with current price information.

9. List of special tools required for testing, checking, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and are not customarily and routinely carried by maintenance mechanics)

10. List of special tools furnished with the equipment

11. List of materials and supplies required for the equipment prior to, and during startup

12. List of materials or supplies furnished with the equipment

13. Special handling instructions

14. Requirements for storage and protection prior to installation

15. Requirements for routine maintenance required prior to equipment startup

16. List of all requested exceptions to the Project Documents

1.0.7. SUBMITTAL REQUIRED FOR FOREIGN MANUFACTURED ITEMS

A. In addition to the submittal requirements stated above, suppliers of foreign manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the work. Failure to prove these capabilities shall be cause for rejection of the foreign manufactured items.

B. Foreign manufactured equipment and materials shall in all cases be clearly and permanently marked with the manufacturer's name and country of origin of the item. The name of the U.S. importing/supplying firm is not acceptable. Shop Drawing submittals of foreign-made items shall be accompanied by written information to include name and location (i.e. country, City, and street address) of the manufacturer. This requirement shall also apply to the foreign made elements of items assembled in this country from parts wholly or partially manufactured overseas.

1. The words, "Permanently Marked" as used in this paragraph shall mean; die stamped, cast-in, welded, or otherwise marked such that the removal of the marking by any mechanical or chemical means will result in obvious permanent damage to the surface marked. These markings shall be on surfaces which are not hidden by assembly.

C. Where specified elsewhere herein or at the sole discretion of the Engineer, whose word shall be final, supply verification of quality, suitability or other aspects, as directed by the Engineer, from a Professional Engineer licensed to practice in the State of Florida or the state where the supplying U.S. firm is located. The verification shall be signed, sealed, and dated. All costs for this verification shall be at the sole expense of the Contractor and no extra compensation will be allowed. Verification by foreign-based engineers, firms, manufacturers, etc. will not be acceptable.

1.0.8. SAMPLES

A. Furnish for the approval of the Engineer, samples required by the Project Documents or required by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture and pattern.

3. A minimum of two samples of each Item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of Project.

2. Material or Equipment Represented.

3. Name of Producer and Brand (if any) Location in Project.

D. Prepare a transmittal letter in triplicate for each shipment of samples containing the information specified herein in Paragraph 1.05 A. Enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use specified and shall not be construed to change or modify any Contract requirements.

E. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples.

1.0.9. SUSTITUTION

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents, which are proposed by the Contractor after award of the Contract, are considered to be requests for substitutions. Where the plans and/or specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use. Articles or products of similar characteristics may be offered for the approval of the Engineer, whose decision shall be final. Copies of complete descriptive data shall be furnished regarding all materials furnished by the Contractor, consisting of Dimension drawings, catalog references, product data, cost, and other information necessary to clearly identify and evaluate each article.

B. When substitutions are permitted, the Contractor shall make all necessary changes in adjacent, connected, or other structures and equipment at his expense. the Contractor shall make all necessary changes in adjacent or connected structures and equipment at his expense. Where contemplated changes, substitutions or appurtenant work require engineering design, in the opinion of the Engineer, the Contractor shall have such design services performed at his expense. Said engineering design services shall be of an extent satisfactory to the Engineer whose word shall be final and shall

be performed by a Registered Professional Engineer licensed to practice in the State of Florida.

C. Where there is a deviation from the Specifications, the Contractor shall note it and state the reasons why a deviation is required.

D. Where engineer-recommended changes, substitutions or appurtenant work require engineering design, the Contractor shall have such design services performed. Those engineering design services shall be of an extent satisfactory to the Engineer, whose decision shall be final.

E. The approval of Pre-Approved product sheets, shop drawings and data will be general and shall mean that upon examination of the drawings, no variations from the approved project drawings and project requirements have been discovered, and approval will not relieve the Contractor of his responsibilities as defined above. The City's review will not constitute an approval of dimensions, quantities and details of the material, equipment or item shown.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01380 CONSTRUCTION PHOTOGRAPHS AND VIDEO PHOTOGRAPHY

PART 1 – GENERAL

1.0.1 DESCRIPTION OF WORK

A. This section specifies the taking and submission of construction photographs and audio-video photography.

B. Prior to the delivery of any equipment, materials or supplies to the site of any work, or to the beginning of any of the construction work, the Contractor shall provide pre-construction photography as specified herein for the purpose of establishing the surface conditions existing in all of the areas to be affected by the construction of the Project.

C. Pre-Construction Photographs: The Contractor shall video/photograph the entire project site during normal working hours including all concrete and asphalt pavements, curb and gutter, fencing, landscaping to remain, structures to be demolished, and existing structures that are to be modified. All videos and photographs shall be date and time stamped and a digital copy submitted on a flash drive/memory stick or media acceptable to the Department prior to beginning construction activities. The video/photographs shall clearly identify existing site and structural conditions.

D. Ground photography shall consist of photographs and color video taping of surface features taken along the entire length of the Project and including all work, intersecting roadways and properties that will be impacted by the water service conversions.

E. The purpose of the color audio-video taping of the project is to provide the necessary information for restoration of surface features after completion of the Project. The Contractor shall be responsible for repairing any damage or defect not documented as existing prior to construction.

1.0.2 QUALITY ASSURANCE

A. Photographs shall be clean, sharp and clearly show details. Out-of-focus photographs will not be acceptable.

B. Digital photographs which are poorly lit or lack definition will not be acceptable

1.0.3 SUBMITTALS

A. Submit one (1) final digital file of each construction photograph and one (1) flash drive/memory stick or acceptable media with the video as follows:

1. Within fourteen (14) days of receiving Notice to Proceed

2. Number photographs in sequence beginning with the numeral one

PART 2 – PRODUCTS

2.0.1 SIZE AND QUALITY

A. Digital pictures and videos shall be compatible with City's software, color, 3½-inches by 5-inches.

B. Digital pictures and videos shall be compatible with City's software.

2.0.2 IDENTIFICATION

A. Each photograph shall be stamped with the following information stamped or typed on the back of the print:

CITY OF OPA-LOCKA WORKS DEPARTMENT
Contract No. _____
CONTRACTOR: _____
Photograph No. _____ Date: _____ Time: _____
Description: _____
_____
_____

2.0.3 QUANTITY

A. A minimum of twelve (12) photographs shall be taken prior to construction and twelve more each month until completion of the Work.

B. In the instance of a pipeline installation, take a minimum of one photograph each 200 feet or fraction thereof along the entire route of the main initially. During construction a minimum of one photograph every two hundred feet or fraction thereof of that portion of the main constructed during the month until completion.

C. The number of photographs required shall be at the sole discretion of the Engineer whose decision shall be final.

D. An increase in the number of photographs above the minimums shall not be cause for an increase in cost and no extra compensation will be allowed.

2.0.4 VIDEO PHOTOGRAPHY

A. Color audio-video shall be submitted on a flash drive/memory stick or acceptable media.

PART 3 – EXECUTION

3.0.1 INITIAL AND CONSTRUCTION PHOTOGRAPHY

A. Take pre-construction photographs of the entire site or route of the main after receiving the Notice to Proceed and prior to disturbing the site in any manner. Coordinate with the Engineer as to the vantage points and number of photographs required in Paragraph 2.0.3.

B. Photography During Construction: Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

C. Photographic equipment utilized shall be of sufficient quality to produce pictures capable of being enlarged without loss of definition or sharpness.

3.0.2 PHOTOGRAPHY DURING CONSTRUCTION

a. Coordinate with the Engineer as to the actual number and location of views to be photographed and the day and time of photographing.

3.0.3 VIDEO PHOTOGRAPHY

A. Coverage of Taping: Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, streets, signs, landscaping, trees, catch basins, fences, visible utilities and all buildings located within the work zone of the Project. Of particular concern are any existing faults, fractures, defects or other features. Audio description shall be made simultaneously with and support the video coverage.

B. Streets: shall be recorded by audio-video tape for the full width of the right-of-way, except where specifically noted otherwise by the Engineer.

C. Front, Side and Rear Yard Areas: shall be recorded by audio-video tape of properties impacted by the water service conversions.

3.0.4 LOCATION INFORMATION

A. All flash drives/memory sticks or other acceptable media shall be properly identified by number, location and project name in a manner acceptable to the Engineer.

B. A record of the contents of each flash drive/memory stick or acceptable media shall be supplied on a run sheet identifying each segment in the tape by location, i.e., street

viewing side, traveling direction, engineering stationing, and all referenced by tape counter numbers.

C. All video recordings shall begin with the date and time of recording, the project name, the sheet numbers of engineering stationing as shown on the plans, the name of the street, area or building being taped, the direction of travel and the viewing side. Houses and buildings shall be identified visually by house or building address, when possible, in such manner that the progress of the taping and the proposed system may be located by reference to the houses and buildings.

3.0.5 SITE RECORDING CONDITIONS

A. All audio-video taping shall be done during times of good visibility. No outside taping shall be done during periods of visible precipitation or when the ground area is covered with leaves or debris, unless otherwise authorized by the Engineer.

B. In order to produce the proper detail and perspective, adequate auxiliary lighting will be required to fill in shadow areas caused by trees, utility poles, road signs and other such objects, as well as other conditions requiring artificial illumination.

C. The average rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 60 feet per minute. Planning rates and zoom-out rates shall be controlled sufficiently so that playback will produce adequate clarity of the object being viewed.

END OF SECTION

01400 QUALITY CONTROL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The intent of this section is to emphasize the City interest in quality products being designed and installed within the time and cost considerations of the project. The Contractor shall have primary responsibility for providing Quality Control (QC) for project during both design and construction phases. Quality Control includes, but is not limited to, such functions as:

1. Assuring only latest revisions of design and other documents used for construction (e.g., Shop Drawings, catalog cuts, schedules) are being used by project staff.

2. Inspection of materials and equipment delivered to the site.

3. Inspection and maintenance of materials and equipment in storage.

4. In progress and Final Inspection of the constructed product.

5. Manufacturer's Certification of Installation for service intended.

6. Reporting on work in progress daily.

B. The Contractor shall have a QC System and sufficient QC staff, in place in the design team office and on the jobsite always that work is underway.

C. The Contractor is responsible for controlling the quality of the work, including that portion of the work performed by Engineer of Record, the Cogeneration system manufacturer and on-site Subcontractors. The Contractor is also responsible for assuring that suppliers and manufacturers providing materials and products to be incorporated into the work satisfy the specified quality, provide required documentation, and provide those services as specified within the technical portions of the specifications.

D. The Contractor shall develop and submit a Quality Control Plan which identifies the reporting structure of the QC organization, defines the procedures to be implemented by the Contractor to assure the specified quality is achieved, and details the daily reporting protocol. Within 20 calendar days of the Notice to Proceed (NTP), the Contractor shall submit their proposed Quality Control Plan. The Engineer will schedule a review meeting of the outline within one week of receipt of the plan outline. Final submission of the quality control plan shall be made no later than 10 calendar days following the review meeting.

E. The Contractor and Engineer will coordinate materials testing for cast-in-place concrete, earthwork, and paving.

1.0.2. MATERIALS AND EQUIPMENT

A. The Contractor shall maintain control over procurement sources to ensure that materials and equipment conform to specified requirements.

B. The Contractor shall comply with manufacturer's instructions regarding all facets of materials and/or equipment movement, storage, installation, testing, startup, and operation.

C. The Contractor shall prepare, complete, and maintain all equipment, pipe, and testing logs that document the dates and disposition of each specific test conducted. The logs will be comprised of a summary sheet that is corroborated by individual test report forms that document the specific tests. The individual test report form will be provided by the Engineer.

1.0.3. MANUFACTURER'S TECHNICAL REPRESENTATIVE

A. When specified in the technical specification sections, the Contractor shall arrange for and provide technical representation directly from the manufacturers of respective equipment items or components.

B. If, in the opinion of the Engineer, the Manufacturer's Representative fails to satisfy the terms of this Specification section, the Engineer may direct the Contractor to replace the Representative with a different representative, and those hours expended by the disapproved representative will not be counted against the service hours specified for the system/unit/component.

PART 2 – PRODUCTS

2.0.1. QUALITY CONTROL PLAN

A. The Quality Control Plan shall be a formal document prepared under the direction of the Contractor. The Plan will be the basis by which the Engineer will monitor the QC effort associated with executing the work.

B. The Plan shall address the Quality Control Organization and the roles each member of the organization plays in satisfying the quality requirements of the work.

C. Included within the plan will be basic guidelines associated with the checking and monitoring of work as it progresses and how the guidelines will be used by Contractor's supervisors and representatives to provide the required quality.

D. The process for notification of quality concerns shall be included in the Plan.

2.0.2. REPORTS

A. Monthly Quality Control Summary that addresses the following:

1. Certification by Contractor that all work not specifically cited by a Non-Conformance Report satisfies the requirements of the Contract Documents.

2. Summary table identifying all non-conformance notices and their respective current status.

B. Certificate of Proper Installation shall address installation of equipment items.

PART 3 – EXECUTION

3.0.1. QUALITY CONTROL

A. Quality control is the responsibility of the Contractor, and the Contractor shall maintain control over construction and installation processes to assure compliance with specified requirements.

B. Means and methods of construction and installation processes are the responsibility of the Contractor, and at no time is it the intent of the Engineer to supersede or void that responsibility. In the event there is a degree of uncertainty that the process observed or planned will accomplish the required quality, the Engineer will refer to the Quality Control Plan and initiate discussion with the person primarily responsible for the process or installation in question.

C. Prepare and submit weekly Quality Control activity reports to the Engineer.

D. Monthly Quality Control Summaries are to be prepared and submitted to the Engineer with the Contractor's Partial Payment request for the respective period.

END OF SECTION

01510 TEMPORARY UTILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide temporary facilities required, which may include, but not limited to, the following:

1. Contractor's field office, telephone and storage sheds.

2. Temporary water service.

3. Temporary sanitary service.

4. Temporary electrical service.

B. For additional requirements on Temporary Facilities refer to Section 01100 “Special Project Requirements”.

C. Requirements of Regulatory Agencies:

1. Obtain and pay for permits as required by governing authorities.

2. Comply with federal, state and local codes and regulations.

1.0.2. TEMPORARY ELECTRICITY

A. The City will not furnish electric power for this project. All electrical driven equipment, including electrical welders, shall be served by the temporary electrical service to be provided by the Contractor.

B. The Contractor shall supply extension cords, ground fault circuit interrupters, and safety equipment necessary to protect his workmen and plant personnel.

C. The Contractor shall obtain a power source for temporary electricity from electrical generators or other approved means. Furnish, install and maintain temporary electric power service for construction needs throughout construction site as necessary.

1. Power centers for miscellaneous tools and equipment used in construction work.

2. Power for construction equipment.

3. Power for testing and checking equipment.

4. Power for welding units and for other equipment having special power requirements.

D. Capacity:

1. Adequate electrical service distribution for construction use by all trades and Field Offices during construction period.

2. Notify FPL if unusually heavy loads, such as welding, pumps, high service temporary pump, and other special power requirements, will be connected.

E. Maintain strict supervision of use of temporary services.

1. Enforce conformance with applicable standards.

2. Enforce safe practices.

3. Prevent abuse of services.

1.0.3. TEMPORARY SANITARY FACILITIES

A. Furnish, install and maintain temporary sanitary facilities for use throughout construction period.

1. Enclosed toilet facilities for construction personnel.

2. General employee washing facilities.

B. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of Contractor's employees. Toilets at construction sites shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.

C. Minimum number of fixtures:

1. Toilets and Urinals:

For less than 20 employees: 1 toilet.
For 20 or more employees: 1 toilet and 1 urinal per 40 workers.

2. Washing Facilities: Adequate for number of employees, for type of work requiring washing facilities.

D. Maintain strict supervision of use of facilities:

1. Enforce conformance with applicable standards.

2. Maintain service and clean facilities.

3. Enforce proper use of sanitary facilities.

E. Cost of Installation and Operation:

1. Pay costs of temporary sanitary facilities, including costs of installation, maintenance and removal.

2. Costs of Water: As specified in Temporary Water.

3. Pay service charges for use of portable units.

F. Facility Locations:

1. Within the project site.

2. At Field Offices

3. Toilet and washing facilities:

Secluded from public observation.
Convenient for use of personnel in relation to work stations.

4. Obtain acceptance of the Engineer for all locations.

G. Enclosure for Toilet Facilities:

1. Weatherproof, sight proof, sturdy temporary enclosures.

2. Insect proof screening, adequate natural ventilation.

H. Sewer Connection: The Contractor shall coordinate with the City's Public Works Department for obtaining sewer connection and shall pay permit and sewer usage charges.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. General: Materials may be new or used, but must be adequate for purpose required, must be sanitary and must not violate requirements of applicable codes. Materials in contact with potable water must be AWWA/NSF 61 listed.

2.0.2. ELECTRICITY

A. Provide required facilities, including transformers, conductors, poles, conduits, raceways, breakers, fuses and switches.

B. Provide appropriate enclosures for environment in which used, in compliance with NEMA standards.

2.0.3. DRINKING WATER FACILITIES

A. Portable Containers

1. Tightly closed and equipped with dispensing tap.

2. Clearly label contents.

3. Do not use for other purposes.

4. Provide single service disposable cups, with sanitary container for unused cups, and receptacles for used cups.

2.0.4. SANITARY FACILITIES

A. Toilet Facilities:

1. Portable toilets; either:

a. Chemical toilets.

b. Reticulating toilets.

c. Combustion toilets.

2. Toilet Tissue: Provide at each toilet, on suitable dispenser.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Obtain Engineer's approval of planned installations.

B. Install work in a neat and orderly manner.

C. Make structurally sound throughout.

D. Maintain to provide continuous service.

E. Modify and extend service as work progress requires.

3.0.2. TEMPORARY WATER

A. Locate piping and outlets.

1. Provide service convenient to work stations.

B. Avoid interference with:

1. Traffic and work areas.

2. Materials handling equipment.

3. Storage areas.

C. Do not run piping on floor or on ground.

D. When necessary to maintain pressure, provide temporary pumps, tanks and compressors.

3.0.3. TEMPORARY ELECTRICITY

A. Service and distribution may be overhead or underground.

B. Locate to avoid interference with:

1. Traffic and work areas.

2. Cranes.

3. Material handling equipment.

4. Storage areas.

C. Do not run branch circuits on floor or on ground.

D. Wire all safety devices required for operation of equipment.

E. Check operation of safety devices.

3.0.4. TEMPORARY SANITARY FACILITIES

A. Portable Toilets:

1. Erect securely and anchor to prevent dislocation.

2. Service as often as necessary to prevent accumulation of wastes and creation of unsanitary conditions.

B. Washing Facilities: Provide faucet

3.0.5. REMOVAL

A. Completely remove temporary materials and equipment upon completion of construction.

B. Clean and repair damage caused by installation and restore to specified or original condition.

END OF SECTION

01530 PROTECTION OF EXISTING FACILITIES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall exercise extreme care and protect all existing structures and utilities, when working in proximity so as not to disturb the structures. Repair or replacement of any property and/or structures damaged during the construction of this project shall be the sole responsibility of the Contractor. Costs involved in the replacement or repair will not be reimbursed by the City. The Contractor shall be responsible for coordinating his work with the work to be done by FPL or their Contractor.

B. Protection of Property Remaining in Place:
   1. Property obstructions which are to remain in place, such as buildings, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced. Any damage to such obstructions noted to remain in place shall be repaired by the Contractor at no additional cost to the City or Owner.
   2. Should structures be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

C. The underground utilities, structures and other facilities shown on the plans are located according to the best information available but may vary by several feet from both the position and elevation shown. The Contractor shall explore far enough in advance of his main trench to determine the exact location and condition of such utilities, structures or facilities so that, before the pipe is installed, the Engineer may change the line or grade of the pipe, should that become necessary to avoid a conflict.

1.0.2. GENERAL CONSIDERATIONS

A. All cost for changing the grade of the proposed main downward two feet-six inches or less in order to clear obstructions located differently than shown on the plans, or to clear obstructions not shown on the plans but the location of which could have become known or should have become known by proper observation of field conditions or the proper exploratory procedure, shall be included in the prices bid under the various items of the Proposal and no additional compensation will be allowed.

B. Additional cost, if any, for changing the grade of the proposed main downward more than two feet-six inches, for the same reasons, will be paid for as "Extra Work" in accordance with "Extra Work and Payment Therefore" of the Special Conditions.

C. Changing the grade of the proposed main by rising deflections, or the alignment by horizontal deflections, will not be considered as extra work, or extra cost, to the Contractor, and in some cases a credit to the City may be warranted.

D. Where the Quotation contains Items for installing main in specific depth ranges, the main shall be paid for at the actual depth range installed. However, the provisions of paragraphs one and two of this Section shall apply and any depth increase caused by a lack of timely and sufficient exploration by the Contractor shall be at his expense. In such instance, the main shall be paid for as if installed at the invert elevations originally shown on the Plans.

E. In all cases where the main is deflected either horizontally or vertically, and the Engineer requires additional work and items such as paving, air release valve assemblies, and similar items for which a pay item was established in the Proposal, then such additional work and items will be paid for at the prices bid.

F. The Contractor shall determine the locations of recent additions to the systems not shown on the plans. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from his activities. The location of all overhead utilities shall be verified, and the Engineer notified of any conflict which might occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as is required.

G. Where it is necessary to temporarily interrupt house or building services, the Contractor shall notify the house or building owner or occupant, both before the interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the Contractor shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Contractor shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved.

H. Various drainage culverts and drainage ditches may be encountered along the route of the work. Any culverts which are disturbed, damaged or removed shall be repaired, restored or reinstalled. The Contractor shall document any existing damage to the drainage systems, or if it needs cleaning, prior to doing any work in the vicinity, so he will not be held responsible. Drainage ditches shall be restored to the original cross sections existing prior to construction of this work. Ditches shall be left clean and free of all excavated materials or other materials deposited in them as a result of this construction. All existing headwalls, removed or damaged as a result of this construction, shall be restored as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the other items of the quotation.

I. All existing drainage structures and piping shall be considered clean at the start of construction. The Contractor shall check to verify that this is so. The Contractor

should notify the governing agency of any damaged or dirty structures or piping to avoid repair or cleaning at his expense. Copies of such notices shall be sent to the Engineer.

1.0.3. RELOCATION OF EXISTING UTILITIES

A. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

B. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer. There shall be no additional payment for adjustments in grades or location resulting from locations of existing utilities.

D. Various storm sewer lines and inlets and slab-covered drainage ditches that conflict with the proposed construction may require adjustment, relocation or removal and reinstallation. This work shall be performed as directed by the Engineer, and the work shall be considered an incidental item and the cost included in the items listed in the quotation.

E. Representatives of utility companies, the railroad companies, the traffic and transportation authorities, etc., shall be notified in accordance with the provisions set forth in the relevant sections of the Specifications and the permitting documents.

F. Notify all utility companies that are affected by the construction operation at least forty-eight (48) hours in advance. Under no circumstance expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose and provide temporary support for all existing underground utilities and utility poles where necessary.

G. Absolutely no extra compensation will be allowed for construction problems created by utility poles of whatever size, overhead electric, telephone or other lines, whether shown on the Plans or not. The Contractor is solely responsible for discovering such items in the field prior to bidding and including all costs for such work in the prices bid.

1.0.4. PROTECTION OF UTILITIES TO REMAIN IN PLACE

A. The work area may have existing utilities, such as, but not limited to irrigation, phone, electrical, water, sewer, storm sewer, and gas lines. It shall be the responsibility of the Contractor to verify the location of all such utilities, structures, etc. by hand excavation or other appropriate measures before performing any work that could result in damage or injury to persons, utilities, structures, or property. The Contractor shall make a thorough search of the site for utilities before work is commenced in any particular location. The Contractor shall take special consideration to protect the existing water main, force main and power line along the project location to avoid service disruptions.

B. During construction, the Contractor shall protect the existing and proposed water main and force main using steel plates, as indicated in the drawings, until site work is completed and final grade is achieved. The Contractor shall be responsible for the repair of any damages caused to these pipes during construction at no additional costs to the City.

C. The Contractor shall take immediate steps to repair, replace, or restore all services to any utilities or other facilities which are disrupted at the fault of the Contractor. Further, the Contractor shall engage any additional outside repairs on a continuous “around the clock” basis until services are restored. The Contractor shall also provide and operate any supplemental temporary services to maintain uninterrupted use of the facilities. All costs involved in the repairs and restoring of disrupted service resulting from negligence on the part of the Contractor shall be borne by the Contractor and shall be fully responsible for any and all claims resulting from the damage.

D. Should utilities be encountered which interfere with the work, the City or designee shall be consulted immediately in order for a decision to be made on the relocation of the work so it will clear the obstruction, if the obstruction cannot be relocated.

E. Prior to the start of construction, the contractor shall comply with F.S. 553.851 for the protection of underground gas lines.

F. When power poles are adjacent to any proposed utility, the Contractor shall provide proper shoring or other suitable support during construction. The shoring and support methods shall be approved by the utility company engineering department. The cost of shoring will be included in the overall project cost.

G. The Contractor shall not purposefully disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the City. Requests for disconnection must be in writing and received by the City at least 72 hours prior to the time of the requested interruption.

1.0.5. PROTECTION OF TREES REMAINING IN PLACE

A. Construction can potentially damage the existing trees confined within the construction zone. Besides their aesthetic value, some trees are valuable and may be environmentally protected. Mangroves and mangrove associated species (as defined by Miami-Dade County Code of Ordinances) are the jurisdiction of Miami-Dade County and would fall under the Miami-Dade County Code of Ordinances, Chapter 24, Division II.

B. Trees can be an important part of the ecological environment of the surrounding area. Measures should be in place to protect trees whenever necessary, including conservation of the canopy.

C. Where directed by the City, desirable trees within the roadway area shall be trimmed, protected, and left standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give clear height of 14 feet over vehicular areas and 8 feet over pedestrian areas.

D. When pruning cuts or root pruning to existing trees is shown in the Plans, work is to be supervised on site by an International Society of Arboriculture (ISA) or American Society of Consulting Arborists (ASCA) Certified Arborist and performed in accordance with American National Standards Institute (ANSI).

E. All trees found within a FDOT designated road shall comply with the appropriate FDOT index for tree protection barriers. All other tree protection shall be in accordance with the

F. For all areas both inside and outside the earthwork area, the Contractor shall not deface, injury, or destroy trees, nor remove or cut them without prior approval via a tree removal permit from the City of Opa-Locka Any accidental damage to a tree shall immediately be reported to the City of Opa-Locka for evaluation for public safety and possible new and additional permit requirements/work. An after-the-fact tree removal permit may be required.

G. The Contractor shall understand all ANSI tree care standards prior to the start of earthwork. All necessary permitted above and below ground tree work shall follow the appropriate ANSI standards for tree care.

H. Tree relocation, when required, shall be in accordance with CITY CODE

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01540 DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND EQUIPMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish all material, labor, tools, equipment, plant, appliances and services necessary to complete all demolition, modification and relocation work required in the drawings and specified herein. Examine the various drawings, visit the site and determine the extent of work affected therein and all conditions under which he is required to perform the various operations.

B. The Work specifically covered under this Section consists of the removal and disposal of existing structure, appurtenances, concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter. The items to be removed shall be: (1) those items shown in the Plans to be removed; (2) those found within the limits of the area to be cleared and grubbed and directed by the City or designee to be removed; (3) those items which it is necessary to remove in order to construct new structures, utilities, and other appurtenances or obstructions which may be designated in the plans.

C. Demolition shall be constructed in such a way as to leave no obstructions to any proposed new structures or to any waterways. Pilings shall be pulled or shall be cut off or broken off at least 2 feet below the finish grade line. (In the event that the Plans indicate channel excavation to be done by others, the finish ground line shall be considered as the limits of such excavation.) For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed. Retaining walls and drainage structures are specifically not included in the Work covered under this Section.

1.0.2. GENERAL CONSIDERATIONS

A. Demolition, modification, removal and relocation work shall be coordinated with the City, shall be performed in an agreed upon sequence to minimize down time at the site.

B. Promptly remove all demolished materials and debris from the site. No demolished materials shall be kept at the plant site for more than 24 hours.

C. Demolition shall result in the complete removal and disposal of existing structures and appurtenances from the site as indicated on drawings and the cleanup after completion of the demolition work.

D. The cutting and removal of existing work necessary for modifications and installation of new work shall be made with a minimum of damage to the work that is to remain. Any damage done to existing facilities which are to remain shall be repaired at the Contractor's expense to the satisfaction of the City.

E. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.

F. Non-shrink grout shall be used for setting wall casting, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as required.

G. Follow other specific instructions for the modification work given in other sections of these specifications and/or as shown on the drawings.

H. Verify exact location, material, alignment, joint, etc. of existing piping and structure prior to making the modifications and connections called out in the drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.

I. Dismantle and remove all existing equipment, piping and other appurtenances required for the completion of the work. Where called for or required, cut existing pipeline for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removal shall be cut off one inch below the concrete surface. Surface shall be properly repaired and finished.

J. Where necessary or required for the purpose of making connections, cut existing pipelines in a manner to provide an approved joint. Where required, weld beads, flanges or provide the specified couplings, all as required.

K. Site shall be left in a clean condition satisfactory to the Engineer, free from demolished materials, rubbish or debris. Site shall be graded to meet adjacent contours and provide flow for surface drainage.

L. Restore items intended to remain that have been damaged by demolition work.

M. Items intended to remain that have been damaged by demolition work shall be restored to original or better condition.

N. All interrupted utility services shall be returned to service, and temporary services disconnected, unless otherwise specified.

PART 2 – PRODUCTS

2.0.1. STRUCTURES TO BE REMOVED

A. The work specifically covered under this Section consists of the removal and disposal of the material from existing structures.

B. The structures to be removed shall be:

1. Those structures, or portions of structures, shown in the plans to be removed.

2. Those found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed.

3. Those structures, or portions of structures, which it is necessary to remove in order to construct new structures, utilities and other appurtenances or obstructions which may be designated in the plans.

PART 3 – EXECUTION

3.0.1. METHOD OF REMOVAL

A. The structures shall be removed in such a way as to leave no obstructions to any proposed new structures or to any waterways.

B. For material which are to remain the property of the City or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed.

3.0.2. REMOVAL OF EXISTING PAVEMENT

A. The work specified in this Section consists of removing and disposing of existing concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and curb and gutter, where shown in the plans or directed by the Engineer to be removed or where required to be removed because of the construction operations.

B. Retaining walls and drainage structures are specifically not included in the work covered under this Division.

END OF SECTION

1-140

01550 SITE ACCESS AND STORAGE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Gravity Main Relocation work is to be performed along NW 133rd Street, between NW 42nd Avenue and NW 43rd Avenue, Opa-Locka, Florida 33054. The project's owner is the City of Opa-Locka.

1.0.2. EXISTING UTILITIES

A. Protection of, and relocation of existing utilities, structures and other facilities shall be in accordance with Specification *"01530 - Protection of Existing Facilities".*

B. The relocation of existing utilities, as noted on the plans, or for the convenience of the Contractor, shall be the responsibility of the Contractor. This work shall be completed by either the forces of the existing utility or the Contractor's forces at the discretion of the responsible utility. If the work is to be performed by the Contractor, all work shall be done in accordance with the utility company's requirements. The Contractor shall also be responsible for the coordination of all existing utility relocations with the appropriate utilities. Where temporary supports or protective encasements are required during the construction, the Contractor shall be responsible for this work at no additional cost. Under no circumstances shall the Contractor be authorized extra payment for this work, and all cost for the relocation shall be the responsibility of the Contractor.

C. Any conflicts between the field investigation and the information shown on the plans shall be brought to the immediate attention of the Engineer.

1.0.3. SITE ACCESS AND STORAGE

A. The City reserves the right to enter upon, and to use, any and all portions of the work performed hereunder (or under its other Contracts), whether completed or not, as may be required.

B. Highway Limitations: The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the work. It shall be the Contractor's responsibility to construct and maintain any haul roads required for its construction operations.

C. Temporary Crossings: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, parking lots, Vehicular access to

all production facilities shall be maintained except when necessary construction precludes such access for reasonable periods of time.

D. Street Use: Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alleyway, or parking area during the performance of the work hereunder and it shall conduct its operations to not interfere unnecessarily with the City or any other authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed plant operations without first obtaining permission of the Engineer and the City. Where excavation is being performed in any streets, one lane shall always be kept open to traffic, unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the Engineer or the City. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment. Temporary provisions shall be made by the Contractor to assure the use of sidewalks and the proper functioning of gutters, storm drain inlets, and other drainage facilities.

E. Additional Facilities: Access to other facilities within the project site shall be allowed by the Contractor for City's staff conduct their operation and maintenance activities. Continuous, unobstructed, safe and adequate pedestrian and vehicular for the City's staff to access facilities within the project site such as the electrical building, emergency generator, water tanks and Pump Station 23 is required.

1.0.4. CONTRACTOR WORK AND STORAGE AREA

A. The Contractor may utilize private warehouse and/or office space as a storage area and/or construction field offices.

B. The Contractor shall submit to the Engineer for approval, a proposed plan and layout for all field offices, temporary facilities, and parking both for on the project site and on any additional lands obtained by the Contractor for its use during construction of the project. Prior to commencing any preparation remove, relocate and protect where necessary all existing underground and above ground facilities, pipelines, sprinkler systems, sod and all other existing installations. All these installations shall be restored to their initial conditions.

C. The Contractor shall construct and use a separate storage area for hazardous materials used in constructing the work.

1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are products labeled with any of the following terms: Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, 2 part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.

2. Hazardous materials shall be stored in groupings according to the Material Safety Data Sheets.

3. Contractor shall develop and submit to the Engineer a plan for storing and disposing of the materials above.

4. Contractor shall obtain and submit to the Engineer a single EPA number for wastes generated at the site.

5. The separate storage area shall meet the requirements of authorities having jurisdiction over the storage of hazardous materials.

6. Hazardous materials that are delivered in containers shall be stored in the original containers until use. Hazardous materials delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.0.5. PARKING

A. The Contractor shall be responsible for making its own arrangements for parking of its direct employees, Subcontractors, vendors, etc. as may be necessary either on site or offsite.

B. Traffic and parking areas shall be maintained in good conditions, free of excavated material, construction equipment, mud, and construction materials. The Contractor shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01560 TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. For any work conducted in a contaminated area within the project boundaries where hazardous materials or hydrocarbons have been encountered, were previously known to exist, or is suspected by the Contractor or the City Inspector, the Contractor must comply with all applicable requirements of OSHA, EPA, FDEP, Miami-Dade County Regulatory and the City's Environment and Sustainability Department.

B. All work defined by this Division, including work less than one (1) acre in size, that has the potential to impact the City's Municipal Separate Storm Water System (MS4), and/or adjacent properties, is required to employ sediment and erosion control measures that are in accordance with Florida Storm Water Erosion and Sedimentation Control Inspector's Manual, latest revision, and in accordance with Miami-Dade County Department of Environmental Resources Management.

C. All construction activity that results in the disturbance of equal to or greater than one (1) acre is required to obtain coverage under the Florida Department of Environmental Protection's Generic Permit for Storm Water Discharge from Large and Small Construction Activities (CGP).

1.0.2. SPECIALIZED CONSTRUCTION AREA

A. Specialized construction areas are defined as areas where contaminants are discovered and require construction by personnel qualified by training and equipped with personal protective equipment for such work.

B. Work in specialized construction areas shall be carried out by personnel qualified by training and equipped for such activities. These personnel shall be either Subcontractors with licensing and certification as specialists in this type of construction or the Contractor's own personnel who have taken and been certified as having passed the required training course(s). Licensing and certifications shall be submitted to the City for verification and shall in all cases be satisfactory to both, the City and other authorities with jurisdiction.

1.0.3. DUST ABATEMENT

A. All permittees, contractors, owners, operators, or other persons involved in construction activities shall refer to applicable sections of Local, State, and Federal regulations on dust control for additional guidance, including but not limited to the Miami-Dade County Code of Ordinances.

B. All persons involved in construction activities shall take measures to control dust from operations and prevent spillage of excavated materials on public roads.

C. All persons involved in construction activities shall remove spillage of excavated materials, debris, and dust from public roads by methods approved by the City or designee.

D. All persons involved in construction activities shall provide temporary dust-proof partitions where required to protect unaltered portions of existing structures and facilities and as directed by the City or designee. Temporary partitions shall be provided where demolition work is required to protect equipment and material and shall consist of plastic sheeting (6 mil).

E. All persons involved in construction activities shall apply water at locations, quantities, and frequencies required by the City or designee to control dust for nuisance prevention to the City and properties in the vicinity of the site. The frequency of watering will be determined by weather conditions and the erodibility of the soil. If additives in the water are used to increase its dust suppression properties, the chemical should have no adverse environmental impact on adjacent water bodies.

F. The Contractor shall prevent its operation from producing dust in amounts damaging to property or causing a nuisance to persons occupying buildings in the vicinity of the project Site. The Contractor shall employ measures to prevent fugitive dust. The Contractor shall be responsible for any damage resulting from dust originating from its operations.

G. Storage Piles: Enclose, cover, water (as needed), or apply non-toxic soil binders according to manufacturer's specifications on material piles (i.e. gravel, sand, dirt) with a silt content of 5 percent or greater.

H. Active Areas of Site: Water active construction areas and unpaved roads as needed and as requested by Engineer to prevent the propagation of dust.

I. Inactive Areas of Site: Apply non-toxic soil stabilizers according to manufacturer's specifications to inactive construction areas, or water as needed to maintain adequate dust control.

J. Vehicle Loads: Cover or maintain at least 2-feet of freeboard vertical distance between the top of the load and the top of the trailer sides on trucks hauling dirt, sand, soil, or other loose materials off of the site.

K. Roads: When there is visible track-out onto a paved public road, install wheel washers where the vehicles exit and enter onto the paved roads and wash the undercarriage of trucks and any equipment leaving the site on each trip. Sweep the paved street at

the end of each shift with a water spray pick-up broom-type street sweeper as necessary or as directed.

L. Vehicle Speeds: Maintain vehicle speeds to 10 mph or less.

M. Additional dust control BMPs include but are not limited to the following.

1. Prevention of dust generation is preferable to applying dust suppression measures. Ensure in the project schedule that the area of cleared land is minimized during the drier months of the year, when dust generation is at its greatest.

2. The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged. The soil shall be completely crusted over by application of water or completely covered with clean gravel or treated with an approved dust suppressant.

3. Ensure that smooth surfaces are deep ripped and left rough and cloddy to reduce the wind velocity at the soil surface.

4. Construct wind fences if appropriate for the site. As a contingency measure, in areas that do not have access to a water supply, water stored on-site should never be less than fifty percent of disturbed land surface. Wherever watering is used to suppress dust, ensure it does not create contaminated runoff that will contaminate surface waters.

5. Use barriers where required to prevent the migration of sawdust or particulates from sanding or surface preparation activities during construction.

1.0.4. SEDIMENTATION ABATEMENT

A. The Contractor shall be responsible for collecting, storing, hauling, and disposing of spoil, silt, and waste materials in compliance with applicable federal, state, and local rules and regulations and the Contract Documents.

B. Install and maintain erosion and sediment control measures, such as swales, grade stabilization structures, berms, dikes, waterways, filter fabric fences, and sediment basins.

C. Filter fabric barrier systems, if used, shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.

D. Remove and dispose of sediment deposits at the designated spoil area. If a spoil area is not indicated, dispose of sediment off-site at a location not in or adjacent to a stream

or floodplain. Sediment to be placed at the spoil area should be spread evenly, compacted, and stabilized. Sediment shall not be allowed to flush into a stream or drainage way.

E. Maintain erosion and sediment control measures until final acceptance or until requested by the Engineer to remove it.

1.0.5. RUBBISH CONTROL

A. During the progress of the work, the Contractor shall keep the site and other areas for which it is responsible in a neat and clean condition and free from any accumulation of rubbish. The Contractor shall dispose of rubbish and waste materials of any nature and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of rubbish and surplus materials shall be off the site in accordance with local codes and ordinances governing locations and methods of disposal and in conformance with applicable safety laws and the requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

B. It is important to maintain the construction site in a neat and satisfactory condition during the during construction and after construction has been completed. B. During construction, the Contractor shall regularly clean up all rubbish, surplus materials, and the adjacent areas affected. Unneeded construction equipment should be removed and all damages repaired so that the public and property owners will be inconvenienced as little as possible.

C. Any material or debris that has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes structures, or elsewhere during the course of the Contractor's operations must be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc., should, upon completion of the Work, be left in a clean and neat condition.

D. The Contractor shall perform the cleanup work on a regular basis and as frequently as ordered by the City or designee. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the City or designee, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.

E. Upon failure of the Contractor to perform periodic clean up and basic restoration of the site to the City or designee's satisfaction, the City or designee may, upon five (5) days prior written notice to the Contractor, employ such labor and equipment as it deems

necessary for the purpose, and all costs resulting there from shall be charged to the Contractor and deducted from amounts of money that it may be due.

F. On or before the completion of the Work, the Contractor shall tear down and remove all temporary buildings and structures; remove all temporary works, tools, and machinery or other construction equipment; remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around houses and other buildings; remove all rubbish from any grounds which has been occupied; and leave roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

G. Upon completion of the Work, the Contractor shall remove from the sites of the subsurface explorations all plant, machinery, tools, equipment, temporary work, and surplus materials; remove all rubbish from any grounds which has been occupied; and leave the roads and all parts of the premises and adjacent property affected by work operations in a neat and satisfactory condition.

H. The Contractor shall thoroughly clean all materials and equipment installed, and, upon completion of the Work, deliver it undamaged and in fresh and new-appearing condition. All mechanical equipment should be left fully charged with lubricant and ready for operation.

I. The Contractor shall restore or replace, when and as directed by the City or designee, any public or private property damaged by work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, perform as required all necessary highway or driveway, walkway, and landscaping work. Suitable materials, equipment, and methods should be used for such restoration. The restoration of existing property or structures should be done as promptly as practicable as work progresses and should not be left until the end of the contract period.

1.0.6. SANITATION

A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: The Contractor shall establish a regular daily collection of sanitary and organic wastes. Wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with Laws and Regulations pertaining thereto.

1.0.7. CHEMICALS

A. Chemicals used on the work or furnished for facility operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.0.8. ADDITIONAL ENVIRONMENTAL CONSIDERATIONS – AFFECTED SOIL

A. Excavation of affected soil shall be accomplished as described in Section 02220 “Excavation – General".

B. Affected soil must be placed on an impermeable barrier when temporarily stockpiled. All stockpile leachate or runoff must be collected for disposal in accordance with applicable federal, state, and local regulations. Soils designated for removal and disposal shall be prepared for shipment, transported, and disposed of in accordance with the requirements of this Section.

C. Affected soils shall be processed at a state licensed facility. These soils shall be transported and disposed of in accordance with federal, state, and local regulations. The Owner shall be responsible for all soil analyses required for transportation and disposal.

D. The Owner shall be responsible for testing soil which has been incinerated to certify the treated soil meets applicable federal, state, and local regulations for final disposal.

E. Free Petroleum Product

1. Some free petroleum products which may be partly or entirely diesel fuel or gasoline may be encountered during excavation or removal of affected soil. The Contractor shall remove free petroleum product, if necessary, when a separate floating phase greater than 0.10-inch thick is present as required by health and safety considerations. The free petroleum product shall be removed by skimming, pumping to an oil/water separator, or other approved methods. The Contractor shall take reasonable precautions to ensure that solids are not entrained in the pumping process.

2. Free petroleum products shall be transported and disposed by the Owner in accordance with federal, state, and local regulations. The Owner is responsible for any laboratory analyses required for disposal of the free petroleum products.

F. Transport and Disposal

1. Transport Regulations: The Owner shall be responsible for the loading, labeling, placarding, marking, weighing, and transport of all waste materials in accordance with the Florida Department of Transportation Regulations, and U.S. Department of Transportation Regulations. The Owner shall use only transporters that are licensed and competent to haul these wastes.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01581 PROJECT SIGNS

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Project Signs

1. City's Responsibility: To supply, erect and remove signs.

2. Contractor Responsibility: To maintain signs and restore site.

PART 2 – PRODUCTS

2.0.1 PROJECT SIGNS

A. The City will supply signs for this Project. These signs will be produced, installed, and at the end of construction, removed by City's forces. During the construction period, the Contractor shall maintain the signs in good condition, satisfactory to the Engineer. Should the signs be defaced, damaged or destroyed, the Contractor shall be responsible for their repair or replacement to the satisfaction of the Engineer and no extra compensation will be allowed.

PART 3 – EXECUTION

3.0.1 MAINTENANCE

A. Maintain signs and supports and repair all damages to the satisfaction of the Engineer.

B. Restore site to original condition upon completion of Project.

END OF SECTION

01600 MATERIALS AND EQUIPMENT SHIPPING, HANDLING, STORAGE AND PROTECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This shall include both the City and Contractor supplied material and equipment.

B. The Contractor is to inform all Subcontractors, suppliers, and manufactures of the requirements herein specified and shall include expenses for the following services in his costs for compliance with the requirements hereinafter specified.

1.0.2. PREPARATION FOR SHIPMENT

A. When practical, equipment shall be factory-assembled. The equipment parts and assemblies that are shipped unassembled shall be furnished with assembly plan and instructions. The separate parts and assemblies shall be factory matchmarked or tagged in a manner to facilitate assembly. All assemblies are to be made by the Contractor at no additional cost to the City.

B. Machined and unpainted parts subject to damage by the elements shall be protected with an application of a strippable protective coating, or other approved protective method.

C. Equipment shall be packaged or crated in a manner that will provide protection from damage during shipping, handling, and storage.

D. The outside of the package or crate shall be adequately marked or tagged to indicate its contents by name and equipment number, if applicable; approximate weight; state any special precautions for handling; and indicate the recommended requirements for storage prior to installation.

1.0.3. PACKING AND DELIVERY OF SPARE PARTS AND SPECIAL TOOLS

A. Properly mark to identify the associated equipment by name, equipment, and part number. Parts shall be packaged in a manner for protection against damage from the elements during shipping, handling, and storage. Ship in boxes that are marked to indicate the contents. Delivery of spare parts and special tools shall be made prior to the time associated equipment is scheduled for the initial test run.

1.0.4. SHIPMENT

A. All equipment and material shall be shipped with freight and shipping paid FOB jobsite.

B. The Contractor shall request a 7-day advance Notice of Shipment from manufacturers, and, upon receipt of such notice, provide the Engineer with a copy of the current delivery information concerning equipment items and material items of critical importance to the project schedule.

C. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.

D. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.

1.0.5. RECEIVING

A. The Contractor shall unload and record the receipt of all equipment and materials at the jobsite.

B. All costs for receiving, inspection, handling, storage, insurance, inventory control, and equipment maintenance for both for both the Contractor-supplied and the City-supplied materials and equipment shall be included in the prices bid and no extra compensation will be allowed.

1.0.6. INSPECTION

A. Immediately upon receipt of equipment and materials at the jobsite, the Contractor shall inspect for completeness and any evidence of damage during shipment. Should there appear to be any shortage or damage, the Engineer shall be immediately notified; and the Contractor shall be fully responsible for informing the manufacturers and the transportation company of the extent of the shortage or damage. If the item or items require replacing or supplying missing parts, the Contractor shall take the necessary measures to expedite the replacement or supply of the missing parts.

1.0.7. HANDLING

A. Equipment and materials received for installation on this project shall be handled in accordance with the manufacturer's recommendations, and in a manner that will prevent damage.

B. Pipes shall always be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such a manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Pipe shall be stored on blocking or timber. It shall not be stored on rocks, boulders, or other supports which in the opinion of the Engineer are

unsuitable. Such materials shall be so placed as to keep obstruction to traffic to a minimum.

1.0.8. STORAGE AND PROTECTION

A. Equipment and materials shall be stored prior to installation as recommended by the manufacturer. Generally, materials such as pipe shall be stored off the ground in approved storage yards or along the line of the proposed pipeline as approved by the Engineer. Items subject to the damage by the elements, vandalism, or theft shall be stored in secure buildings.

B. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instructions shall be studied by the Contractor and he shall review them with the Engineer. Instructions shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.

C. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

D. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored, the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.

E. All bolts, nuts, gaskets and other joint materials for use in pipelines shall be stored under cover.

F. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light, oil gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

G. Plastic pipe and other elastomeric products shall be stored under cover to preclude damage by ultraviolet radiation even if the product has UV inhibitors in its compound.

1.0.9. INSURANCE

A. The Contractor's insurance shall adequately cover the value of materials delivered but not yet incorporated into the work. The Contractor and the City shall be named as co-insured insofar as their respective interests may appear. Proof of this coverage must be submitted to the Engineer at the time request for progress or partial payments.

1.0.10. INVENTORY CONTROL

A. Equipment and materials shall be stored in a manner to provide easy access for inspection and inventory control. The Contractor shall keep a running account of all materials in storage to facilitate inspection and to estimate progress payments for materials delivered but not installed in the work.

1.0.11. EQUIPMENT MAINTENANCE PRIOR TO THE CITYACCEPTANCE

A. Provide the required or manufacturer's recommended maintenance during storage, during the installation, and until such time as the City accepts the equipment for full-time operation.

1.0.12. SALVABLE EQUIPMENT

A. Any salvable pipe, or other miscellaneous material or equipment removed during construction and not reused in the work shall be cleaned, hauled, and stored by the Contractor at his own expense, where directed by the Engineer, and shall remain the property of the City. All other material shall be disposed of by the Contractor at his own expense.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01700 PROJECT CLOSEOUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work Included: This section outlines the procedure to be followed in closing all contracts.

1.0.2. RELATED SECTION

A. Section 01340 “Shop Drawings, Product Data, and Samples”.

B. Section 01720 “Project Record Documents”.

C. City of Opa-Locka General Covenants and Conditions.

1.0.3. FINAL INSPECTIONS

A. The City will not issue preliminary punch lists. After final cleaning and upon written notice from the Contractor that he has inspected the work and it is a 100% completed, the Engineer will make a preliminary inspection with the City and the Contractor present. Upon completion of this preliminary inspection, the Engineer will submit to the Contractor a written final punch list of any which this inspection reveals as defective or incomplete work.

B. Upon receiving written notice from the Engineer, the Contractor shall immediately undertake the work required to remedy the defects and complete the work to the satisfaction of the City.

C. Each item in the punch list shall have a time duration agreed upon by both parties which shall not exceed 10 calendar days. Punchlist items may be eliminated individually from the list when approved by the Engineer.

D. Should the Engineer find all work satisfactory at the time of the inspection, the Contractor will be allowed to make application for final payment in accordance with the provisions of the General Covenants and Conditions.

1. If the Contractor fails to complete any item of work within a time period equal to 100% of the agreed upon duration of time for all individual items, the Engineer will notify the Contractor in writing specifying the conditions pertaining thereto and directing the Contractor to comply with his directive. If the Contractor has not corrected such condition within 5 days of such notice, it shall be sufficient grounds for the Engineer to order the subject items discontinued and have them completely remedied in a timely manner at the expense of the Contractor.

2. No final estimate shall be issued by the Engineer until the Engineer has assured himself that the punch list has been 100% finished and all other related documents are submitted.

1.0.4. FINAL SUBMITTALS

A. The Contractor shall submit all closeout documents required by the Contract Documents, including but not limited to the following.

1. Warranties and guarantees

2. Test reports, including but not limited to:

a. Concrete test results certified by a licensed testing laboratory

3. Inspection and acceptance records

4. Operating and maintenance manuals

5. Project record documents

6. Permit closeout documentation

1.0.5. FINAL PAYMENT APPLICATION

A. Final payment application must include:

1. Final releases of liens from all subcontractors and suppliers

2. Final release from Contractor

3. Final consent of surety bond

4. The Contractor must obtain final Greenspace Management approval for installed landscaping

5. Upon receipt of Final Payment, the Contractor shall execute the Form of Final Receipt, if applicable

1.0.1. GUARANTEES, BONDS, AND AFFIDAVITS

A. No Contract will be finalized until all guarantees, bonds, certificates, licenses, roofing warranty, C.O. and affidavits required for work or equipment as specified are satisfactorily filed with the Engineer.

B. The Contractor shall comply with the Public Records Laws of the State of Florida.

1.0.2. ACCESSORY ITEMS

A. All Contractors furnishing and/or installing equipment and spare parts on this project shall provide to the City, upon acceptance of the equipment, all special accessories required to place each item of equipment in full operation.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01710 CLEANING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This Section specifies the maintenance of the work site in a clean, orderly, hazard free condition.

1.0.2. QUALITY ASSURANCE

A. Conduct cleaning and disposal operations in accordance with local ordinances and anti-pollution laws. Rubbish, volatile wastes, and other construction wastes shall be neither burned nor buried on the work site, and shall not be disposed of into storm drains, sanitary drains, streams or other waterways.

B. Final cleaning shall be accomplished either by workmen experienced in cleaning operations or by professional cleaners.

PART 2 – PRODUCTS

1.0.1. ON SITE WASTE CONTAINERS

A. Provide on-site waste containers for collection of waste materials, debris and rubbish. See Section 01100 “Special Project Requirements”, Subsection 1.0.4. regarding Safety Requirements for environmentally hazardous materials.

1.0.2. CLEANING MATERIALS

A. Cleaning materials shall be as recommended by the manufacturer of the surface to be cleaned.

PART 3 – EXECUTION

1.0.3. SAFETY REQUIREMENT

A. Maintain work site in accordance with local ordinances and anti-pollution laws applicable to work site cleanliness and in a neat, orderly and hazard-free condition until final acceptance of the work. Catwalks, accessible underground structures, work site sidewalks and walkways adjacent to the work site shall be kept free from hazards caused by construction activities.

B. Store volatile wastes including rags in covered metal containers and remove from work site daily.

C. Prevent accumulations of wastes which create hazardous conditions.

D. Artificially ventilate spaces which are not naturally ventilated when volatile or noxious substances are present in those spaces.

1.0.4. CLEANING DURING CONSTRUCTION

A. The Contractor shall at all times during the execution of this Contract keep the work site free and clear of all rubbish and debris. As soon as the work is completed, the accumulated rubbish or surplus materials shall be promptly removed. The Contractor shall also restore in an acceptable manner all property, both public and private, which has been displaced or damaged during the prosecution of the work and shall leave the site and vicinity unobstructed and in a neat and presentable condition.

B. In the event of delay exceeding two (2) days after written notice is given to the Contractor by the Engineer to remove such rubbish or materials or to restore displaced or damaged property, the Engineer may employ such labor and equipment as he may deem necessary for the purpose, and the cost of such work, together with the cost of supervision, shall be charged to the Contractor and shall be deducted from any monies due him. The Project shall not be considered as having been completed until all rubbish and surplus materials have been removed and disposed of properly.

C. Perform cleaning every workday for duration of the work. Structures, grounds, and areas of the work site, access roads and adjacent public and private properties shall be maintained free from accumulations of waste materials and rubbish caused by construction operations on the work site. Place waste materials and rubbish in on site containers or as otherwise approved. Unneeded construction equipment shall be removed and all damaged repaired so that the public and property owners will be inconvenienced as little as possible.

D. Remove or secure loose material on open decks and on other exposed surfaces at end of each day's work or more often to maintain work site in hazard-free condition.

E. Prevent dislodgement of materials due to wind and other forces. Wet down dry materials and rubbish to lay dust and prevent blowing dust. Cover or wet excavated material leaving and arriving at the site to prevent blowing dust. Clean the public access roads to the site of any material falling from the haul trucks.

F. Empty on-site waste containers whenever necessary so that trash overflow does not occur. Legally dispose of contents at either public or private dumping areas.

G. Control the handling of materials, debris and rubbish; do not drop or throw from heights.

H. Immediately remove spillages of construction-related materials from hauling routes.

1.0.5. FINAL CLEANING

A. In addition to the cleaning performed above, in preparation for final inspection, remove grease, dust, dirt, rust stain from surfaces. Remove labels, fingerprints and other

foreign materials from exposed exterior finished surfaces. Flush down all valve boxes, and areas leaving such surfaces clean of all sand, etc.

B. In preparation for final acceptance or occupancy, conduct final inspection and cleaning of exposed exterior surfaces, and of concealed spaces.

C. Maintain cleaning operations until project has been finally accepted.

END OF SECTION

01711 FINAL ACCEPTANCE

PART 1 – GENERAL

1.0.1. FINAL CLEANUP

A. At the completion of work and immediately prior to final inspection, cleaning of the entire project shall be accomplished according to the following provisions:

1. All temporary utility drops, fencing, and water supply outlets shall be removed.

2. All plant gate identification signs, barricades, tools, rubbish collection receptacles and other such items shall be removed by the Contractor.

3. All remaining earthen stockpiles of excess excavated material shall be graded to provide gentle slopes to prevent erosion as directed by the Engineer.

1.0.2. FINAL INSPECTION

A. Following final cleanup, the Contractor shall request an inspection by the Engineer, and Engineer of Record. If the Engineer accepts the work as being complete, then Final Acceptance shall be given to the Contractor in accordance with Contract.

1.0.3. FINAL ACCEPTANCE

A. Following successful final inspection, the Engineer shall approve the work as being complete and provide final acceptance of the work in accordance with the Contract.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

01720 PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor is responsible for maintaining one record copy of:

1. Record Drawings. Record Drawings as used herein shall mean a drawing that reflects construction or design changes.

2. Record Specifications.

3. Addenda.

4. Change Orders and other modifications of the Contract.

5. Engineer's written orders or instructions.

6. Approved Shop Drawings (including product data and samples).

7. Field test records.

8. Construction photographs.

9. As-built dimensions and elevations as recorded on a daily basis by the Contractor's Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

10. Field Book. Survey Field notes taken by the PSM's survey crew (copy provided to the Engineer on a monthly basis)

11. The records listed above are always to be made available for the Engineer's review for all projects.

B. Vertical Datum: Nationwide, surveys and as-builts are in the process of conversion to NAVD 88 from the NGVD 1929. The City will accept NAVD 88 datum with a conversion factor on each page. The Florida Department of Transportation is using the NAVD 88 datum. Projects within FDOT roadway limits shall either use NAVD 88 datum or provide a conversion factor on each page if the NGVD 1929 datum is used. For projects using City of Miami datum provide a conversion factor on each page to the NAVD 88 datum.

1.0.2. MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Maintain documents in a clean dry, legible, condition and in good order. Do not use record documents for construction purposes.

1.0.3. REQUIRED MEASUREMENTS

A. Set-up and Verification: The Contractor's PSM is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

B. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

C. The Contractor is required to have the PSM's survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

D. Field Book Information: The PSM is required to have his crews make daily visits to the Project site during underground pipe installation work to perform field measurements of the Contractor's daily installations. This information shall be recorded in field books. Copies of the field notes are required to be provided to the Construction Manager on a monthly basis. The PSM's field notes shall be submitted to the City along with partial as-built plans (signed and sealed) on a monthly basis as a condition of payment.

1.0.4. RECORDS

A. During the life of the Contract the Contractor shall retain the services of a PSM who shall maintain daily records of the installation, including all deviations from Plans and Specifications and for the purposes of preparing and submitting to the City an as-built/record survey in compliance with:

1. Florida Statutes Chapter 472.027.

2. Florida Administrative Code Chapter 5J-17.050, 5J-17.051 and 5J-17.052.

3. As further required by these Contract Documents.

B. Measure and Record all information for all projects concurrently with constructions progress.

1. The services of the PSM for the Project shall be retained by the Contractor prior to the issuance of the "Notice to Proceed." A letter from the PSM shall be provided at the Preconstruction Meeting indicating that the Contractor has secured his

services to perform all survey work for the duration of the project and prepare final as-builts plans.

C. Redline Drawings:

1. The Contractor shall maintain full size (22-inches by 34-inches) redline drawings to reflect the "record" items of work as the work progresses.

2. At a minimum, the redline drawings shall be reviewed on the 20th working day of every third month, or more often, as deemed necessary by Consultant, after the month in which the final Notice-to Proceed is given as well as on completion of Work. Failure to maintain the redline drawings up-to-date shall be grounds for withholding monthly progress payments until such time as the redline drawings are brought up-to-date.

3. Redline drawings shall be accessible to the City or designee at all times during construction period.

4. The cost of maintaining record changes, and preparation of the as-built record drawings shall be included in the unit prices bid for the affected items.

D. Label each document “PROJECT RECORD” in neat large printed letters.

1. Do not conceal any work until as-built information is recorded by the Contractor’s surveyor and, if so required, by the City surveyor.

2. All locations for future connections or tie-ins shall be left unburied and uncovered until the Contractor’s PSM measures and records the as-built information.

   a. All as-built and inspector information is to be made available to the Engineer daily for inclusion in the City records.

3. Restrained pipe, end line valves, thrust blocks shall be left uncovered for the last complete length. In line valves and tees shall be left exposed for one length on both sides plus the face end. Measure and record the elevation, horizontal and vertical alignment, and inclination for these items.

4. For all projects, the Contractor’s PSM shall maintain exact and extensive records of any deviations from the plans or specifications. These records shall be satisfactory to the Engineer, who’s decision shall be final, and enough to allow the production of accurate as-built plans which correctly and completely portray the work as constructed.

5. For all projects, the Contractor’s PSM shall record data as follows during the entirety of construction:

   a. For facility (e.g. a water or sewage plant, pumping station, or similar site if so, designated by City) projects, record as-built dimensions and elevations every

twenty-five feet or portion thereof along the pipeline and at every abrupt change in direction of the new line.

b. For pipeline projects, constructed in the public right-of-way dimensions and elevations every one-hundred feet or portion thereof along the pipeline and at every horizontal and vertical change in direction.

c. In all cases record locations and elevations for each valve, fitting, service line, fire hydrant, water sampling point, utility poles adjacent to the proposed line, overhead wires crossing the ditch line (approximate height above grade) and other appurtenances along the pipeline.

d. The identity, dimensions, location and elevation of any existing utility crossing the proposed line and so immediately adjacent to the new line as to be exposed by the excavation shall also be recorded. Locate, excavate expose and record the same data for any utility shown in the plans whose proximity to the proposed pipeline could affect the certification requirements of the new installation. Note that in instances of a very wide ditch due to ground conditions the recording of data for adjacent, paralleling, utilities shall only be required for lines which come within three (3) feet of the outside of the pipe being installed unless otherwise ordered by the Engineer who's decision shall be final.

e. Without exception, for all thrust blocks, the top elevation, outer dimensions, thickness of the block, length and location of any sheet piling, if used, shall be recorded by the Contractor's PSM.

f. Specific locations and elevation of equipment, the buildings and miscellaneous items installed inside them shall be recorded as applicable and as required by the Engineer.

g. Without exception, where the substitution of another piece of equipment for that shown on the plans has been allowed, the footprint, clearance and elevation dimensions shall be recorded by the Contractor's PSM and these changes shall be accurately and thoroughly portrayed on the as-built plans.

h. The Contractor's Licensed PSM shall prepare from the field data, as-built record drawings showing correctly, completely and accurately the installation, embracing all changes and deviations made during construction, including all construction variances, to reflect the work as it was constructed.

i. Record Drawings shall be prepared as specified hereinafter.

    1) Record Drawings shall be prepared as specified herein.

    2) Record Drawings and five (5) copies shall be signed and sealed by the PSM and shall be submitted to the City for the Engineer's review within

ten (10) calendar days following the completion date of successful pressure testing of all mains and appurtenances under this Contract.

j. If the Engineer determines that the drawings are not acceptable, they will be returned to the Contractor with a cover letter noting the deficiencies and/or reasons for the disapproval. Contractor shall have ten (10) calendar days to correct all exceptions taken by the Engineer and resubmit as-built record drawings to the Engineer for final acceptance.

1.0.5. DRAWINGS

A. During the life of the Contract, maintain records of all deviations from the plans and specifications and prepare therefrom As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Record Drawings for errors and omissions prior to submittal to the City and certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, Indicate the size, depth and voltage in each conduit.

B. Legibly Mark to Record Actual Construction: All data as previously specified for all installations by the Contractor's . For on-site structures and facilities work the Contractor's Florida Registered Land Surveyor shall record:

1. Depths of various elements of foundation in relation to datum plane.

2. All exposed and underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location, Horizontal and vertical locations of underground utilities and appurtenances, measured from permanent reference points, plant survey grids, property lines and similar.

3. Location of internal utilities and appurtenance concealed in the construction shall be referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.

4. Field changes in dimensions, locations and details.

5. Changes made by Engineer's written instructions or by Change Order.

6. Details not on original plans.

7. Equipment and piping relocations.

8. Major architectural and structural changes in structures, including tanks.

9. Architectural schedule changes according to Contractor's record and shop drawings.

10. Record drawings shall be prepared as specified hereinafter.

C. Specifications and Addenda: Legibly mark each section to record the following:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment installed.

2. Changes made by Engineer's written instructions or by Change Order.

D. Approved Shop Drawings: Provide record copies for system diagrams and drawings together with each element of process equipment, piping, electrical system and instrumentation system.

1.0.6. SUBMITTALS

A. Accompany submittal with transmittal letter in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name, address and phone number

4. Title and number of each Record Document

5. Contractor signature or of its authorized representative.

B. Record Drawings with five blue line copies which have been signed and sealed by the surveyor shall be submitted to the City for the Engineer's review. Drawings shall conform to recognized standards of drafting and the minimum technical standards as set forth by the Board of Professional Surveyors and Mappers, shall be neat, legible and on 24-inch by 36-inch Mylar. These materials shall be submitted to the City for the Engineer's review as a prerequisite for payment during the course of construction as previously specified and final, complete sets of documents within ten calendar days following the completion date of successful testing of all mains, equipment and appurtenances under this Contract. Final payment will not be made until the set of as-built record drawings and five sets of blue-line prints have been approved and accepted by the Engineer.

C. In cases where a portion of a pipeline system or parts of a process system are put into service, the above conditions shall apply for the in-service portion and monthly payments shall be withheld until the as-built drawings are accepted by the Engineer.

D. As-Built Record Drawings, as prepared by the Contractor's Florida Registered Land

Surveyor and submitted by the Contractor, shall comply with following criteria and standards, and as specified in Section 01725 “As-built Drawings”:

1. Title block must show the Contract or Project Title (as applicable); Contract number; City project number (if applicable); Contractor's name; Engineer of Record's name; Surveyor's name and address; date; location; and where appropriate to the work, size and type (i.e. water main, sanitary gravity main, sanitary force main) of main.

    a. Baselines or centerlines must be tied to section corners, monument line and right-of-way lines.

    b. Pipeline must be tied to baseline or centerline with stations and offsets.

    c. Baselines or centerlines must show bearings or deflection angles, or delta, radius, chord and arc length for curves.

    d. Show all horizontal curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

    e. Stationing must be the same as shown on construction drawings and must be tied to Section corners, centerline intersections and all other pertinent control points within the project. All such pertinent points shall have their stationing shown and where there is dual stationing for a point, both stations shall be called out.

    f. Identify all streets by name or number and show stationing at all intersecting streets.

    g. Refer to vertical datum plane and identify the location, elevation and source supplying the benchmark used.

    h. Tie easement lines to survey baseline or platted centerline and rights-of-way.

    i. Show horizontal and vertical locations of all fittings, deflections, or at any significant change of direction, and at a maximum of 100-foot intervals along the pipeline for off-site (e.g. in the public right-of-way) and at maximum 25-foot intervals for on-site (e.g. on a facility such as a pump station or plant) work.

    j. Elevations of natural ground or pavement over the pipeline must be shown at each position where the pipe elevation is shown and at intervening high and low points.

    k. Show all invert and bottom elevations of pipes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

l. Locations and elevations together with diameter, thickness and material of all casings.

m. Location, top and bottom elevations of all sheeting left in place.

n. Coordinate values used inside plants shall be the local, City established coordinate systems referenced to the property boundary.

E. Update of Construction Documents:

1. All "proposed" information shall be removed from as-builts, leaving only "as-built" information reflected in drawing.

2. Upon completion of the Work, the Contractor shall furnish the Consultant the as-built record drawings. Pay request quantities must match as-builts record drawings. The completed as-built record drawings shall be delivered to the Consultant at least 48 hours prior to final inspection of the work. The final inspection will not be conducted unless the as-built record drawings are in the possession of the Consultant.

3. The City reserves the right to have a Registered PSM perform spot checks of as-built information provided by the Contractor. The City shall pay the costs of such survey work when the work is performed by a City of Opa-Locka Contractor. Should any spot checks indicate that any portion of the installation does not comply with the Contract Documents, a recheck shall be performed by another (or third) Registered PSM or agreed to by both the City and Contractor at the Contractor's expense. If the recheck confirms the first check, that portion of the work shall be removed and replaced or modified at no additional cost to the City until satisfactory compliance is attained.

F. Certification: The Contractor shall certify on as-built record drawings all other actual constructed details and information as may be required by the City including but not limited to:

1. Pipeline must be identified by type of pipe material and manufacturer.

2. Types and sizes of sheeting and piling together with measured and complete; location, dimensional and elevation data on any pile caps, tie backs, anchors, whalers or other appurtenant structures left in place.

G. Digital Records: The City reserves the right to require submittal of as-built drawings in AutoCAD format and in PDF format. The AutoCAD file shall be compatible with the City's system and capable of being uploaded without external reference files. Graphical information contained on electronic media shall be the same as provided on plan sheets. Digital Records shall be delivered to the office of the City Engineer, Engineering Division, Opa-Locka Public Works Department at 12950 NW 42 Ave in Opa-Locka, FL 33054. A letter of transmittal shall be provided, containing a list of all files and data being provided.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section shall serve to set out guidelines for as-built drawings submitted to City of Opa-Locka.

B. To ensure that as-built drawings may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The City of Opa-Locka Public Works Department will consider the following elements during as-built during review to ensure the quality of the as-built drawings.

C. The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice established in Chapter 5J-17.050 to 5J-17.052 of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes. The approved final record as-built shall be used as part of the City of Opa-Locka's GIS and Record System.

D. The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

E. As-built drawings shall be prepared in a professional manner consistent with common engineering standards for layout, lettering, and line-work.

F. As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

G. Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

H. As-built drawings shall include all disciplines in the Bid Set drawings.

1.0.2. CRITERIA FOR AS-BUILTS

A. Horizontal: All horizontal control and locations shall be tied to the Florida State Plane Coordinate System, East Zone (NAD 83/2011).

B. Vertical Datum: All vertical control and elevations shall be referenced to National Geodetic Vertical Datum of 1929 (NGVD 1929).

1.0.3. AS-BUILT REVIEW PROCESS

A. SUBMITTAL PACKAGE

The following shall be submitted as one package in order to be accepted for initial

review by the Inspections Unit.

1. Initial submittal (prior to performing field testing) shall include the following: 1 set of signed and sealed as-built (DWFX file), signed and sealed field book information, DWFX file of the as-built and the City Minimum Requirements As-built Plan Submittal.

2. Final submittal shall consist of corrected As-Built Documents in digital format (AutoCAD and DWFX files) and the following sets of signed and sealed as-builts sets:

   Five (5) sets.
   Signed and Sealed Copy of Field Book Information.
   As-builts signed and sealed by the Florida Licensed Professional Surveyor and Mapper and/or Engineer of Record must comply with format requirements.

B. CITY PROCESSING.

1. The City will require Ten (10) business days to perform the as-built review.

2. As-builts will be initially checked by the responsible Field Inspector to verify that they are an accurate representation of the work as installed and that the job as shown is complete and in accordance with the permitted plans.

3. Following the Field Inspector's review, as-builts will be reviewed in depth by the As-Built Reviewer to ensure compliance with these standards. The Reviewer will also check the complete package which includes the Bill of Materials.

C. PUNCH LIST

1. Punch List items may be generated from the City initial review. Successive reviews are solely for the purpose of ensuring that original punch list items are completely and correctly done to obtain a final As-built acceptable to the City.

2. Successive punch list items may only be added to correct a problem resulting from submitter's efforts to comply with the original punch list. No new original punch list item(s) may be added. Submitter shall be required to make these successive changes.

3. In the case of an oversight on the part of the As-built Reviewer, punch list items may be added to the list or requested of the submitter after the valid time for such items. The City requires that all corrections be made as a condition of accepting the final as-builts.

4. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. Annotations to the Contract Documents shall be made with an erasable colored pencil conforming to the following color code:

Additions - Red
Deletions - Green
Comments - Blue
Dimensions - Graphite*

*Legibly mark to record actual depths, horizontal and vertical location of all above and below grade structures, underground pipes, valves, raceways, cables, and appurtenances referenced to permanent surface improvements.

1.0.4. AS-BUILTS SUBMITTAL REQUIREMENTS

A. GENERAL REQUIREMENTS

1. Prior to final acceptance, two (2) copies of as-built drawings certified by a Florida Registered Land Surveyor shall be provided to the City for approval, acceptance and certification by the "Engineer of Record", together with a copy of digital media producing such As-Builts.

2. At minimum, the As-Built must show Station numbers and horizontal offsets from the Base Line and Right-of-Way lines on a Plan scaled 1"=20 ft. for all fittings, valves and changes in horizontal alignment, and a profile with a vertical scale of not less than 1" = 2 ft. with elevations at all horizontal and vertical changes in alignments and grade profile elevations at approximately 50 ft.

3. As-Built plans and profiles must also show all abandoned pipes and plugs that were modified within the project limits and actual elevation/description of all other utilities crossing or encountered in the vicinity of the new water mains. The paper size of the drawings shall be 22"X 34".

4. Any deviations from the design plans must be approved by the City.

B. QUALITY OF AS-BUILTS

To ensure that as-builts may serve their intended purposes now and in the future, they should be prepared with consideration for quality. The As-built Reviewer will consider the following elements to ensure the quality of as-builts.

1. Accuracy: The Contractor is required to have a survey crew record the field information on as necessary when there is underground pipe installation. The Florida Licensed Professional Surveyor and Mapper shall be responsible for providing measurements accurate to the standard of practice of the Florida Administrative Code. The approved final record as-built shall be used as part of the City GIS and Record System.

2. Field Changes: The Contractor's PSM shall maintain exact and extensive records of any deviations from the design plan set.

3. Appearance: As-builts shall be prepared in a professional manner consistent with common engineering standards for layout, lettering and line-work.

4. "Understandability": As-built information shall be portrayed in a manner that is readily understandable by someone not familiar with the specific job.

5. Clarity: Preparer shall endeavor to present as-built information clearly without "cluttering" the drawing.

1.0.5. AS-BUILT CONTENT REQUIREMENTS – ALL DRAWINGS

A. All drawings submitted to the City of Opa-Locka Public Works Department shall include at a minimum the following, where applicable.

1. Centerlines, right-of-way lines, right-of-way dimensions, street widths and names, with matching plat, if applicable, subdivision name, phaseline, and number. (Phasing to be nearest valve and manhole in limits of phase area).

2. Baselines, monuments, monument lines, lot lines, parcel lines.

3. All involved lots and blocks shown and correctly designated (to match plat).

4. All control lines identified (i.e., centerline, section line, etc.). Identify all streets by name or number and show stationing at all intersecting streets.

5. Baseline shall be tied to centerlines, boundary lines, section corners, or to monument lines or to right-of-way lines. Baselines must show bearings or deflection angles, or delta, radius, chord, and arc length for curves.

6. Pipeline installation shall be tied to a baseline that easily identified on the existing or proposed right-of-way. Baseline shall not be on top of the main except for gravity sewers installed on centerlines.

7. Show all existing water, sewer and/or stormwater mains as a broken line (i.e., dashed). Show proposed utility as dark solid line. Also, identify respective utility pipe, size, and material type. Existing or proposed mains 20-inches in diameter and greater, shall be shown as two lines (i.e., double line) of the line type as stated.

8. Show all horizontal and vertical curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.

9. Easements:

a. Easements type and size shall be clearly shown with size and tied to centerline. The easements shall be separate for water, sewer, force main, and pump stations.

b. Existing Official Record Book (ORB) or other record information must be shown.

c. Easement lines shall be tied to the centerline of the main.

10. Separate profile for each segment and utility type (water, sanitary sewer, stormwater, etc.).

11. Every utility (water, sewer, sewer laterals, water services, gas, electric, stormwater, telecommunication, duct banks, etc.) encountered and/or crossing drainage, water, or sanitary sewer facilities (whether it is a conflict or has sufficient clearances) shall be located, both horizontally and vertically. The clearance between the facilities horizontal and vertical, shall be noted. For instance, if a 2-inch gas main crosses over the top of a 6-inch potable water main, the bottom elevation of the gas main shall be noted and the top of the water main shall be noted. The difference between the two facilities will be the clearance between the two facilities. Parallel mains shall note the clearance between the outside of the mains. It shall be the Contractor's responsibility to note these crossings on a daily basis and ensure that this information is reflected on the As-Built Drawing plan set. Crossings will not require state plane coordinates.

12. All utilities shall be stationed and all facilities labeled. Drawings shall show stations for all services. Lengths and distances for service runs shall also be given.

13. Clearly show and label what is new and what is existing at the tie-in points.

14. Show all outlets, stub-outs, sewer lateral, water service and any other relevant information. Identify the size, material, length, direction, and elevation (top of pipe for water, sewer, and stormwater and force mains, invert gravity sewer and stormwater mains).

15. Elevations of natural ground or pavement over pipelines shall be shown at each position where the pipe elevation is shown at least every 100 feet.

16. Manhole rim and valve box manhole rim elevations shall be shown.

17. Show all invert and bottom elevations in manholes and valve vaults or boxes. Show all invert and bottom elevations together with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.

18. Locations, elevations, and size of all casings shall be shown.

19. Locations and top and bottom elevation of all sheeting, including sheeting left in place, shall be shown.

20. Provide State Plane Coordinate values for all visible features such as valves, manholes, maintenance access structures, fire hydrants, water meters, cleanouts, and backflow preventers. Also provide State Plane Coordinate values for existing valves and manholes at points of connection or closest to the point of connection and the point of connection itself.

21. Lines that are abandoned in place shall be located during construction and clearly identified (dashed and bold line type) on the drawings to include cut and plug locations and pipe material.

1.0.6. AS-BUILT CONTENT REQUIREMENTS – PAVING, GRADING, AND DRAINAGE DRAWINGS

A. Paving, grading, and drainage drawings shall include at a minimum the following, where applicable.

1. All existing and proposed utilities in the public right-of-way shall be shown on the paving, grading, and drainage plans. All utilities shall be identified and located by dimension, horizontally and by elevation, and their materials of construction shall be noted to the extent determinable without excavation.

2. Cross-section(s) and/or typical section(s) of proposed road and drainage construction, shall show dimensions, materials, and purposes of all existing (to remain) facilities as well as all proposed facilities within the right-of-way.

3. Pavement marking and signing drawings shall include sign locations.

B. All rock elevations for parking lot, roadways, and swale areas shall include at a minimum the following.

1. Rock elevations at all high and low points, and at enough intermediate points to confirm slope consistency and every 50 feet for roadways.

2. Rock elevations shall be taken at all locations where there is a finish grade elevation shown on the design plans.

3. All catch basin and manhole rim elevations shall be shown.

4. Elevations around medians will also be required.

5. Elevations shall be taken on all paved and unpaved swales prior to placement of asphalt and/or topsoil/sod, at enough intermediate points to confirm slope consistency and conformance to the plan details.

C. Retention area elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be as-built as well.

1.0.7. AS-BUILT SURVEY

A. An as-built survey will be required upon completion of all construction projects that lay within City-owned properties, including, but not limited to, City rights-of-way, easements, parcels, and submerged lands, etc. All improvements, including but not limited to, landscaping will be required.

B. As-built surveys shall be prepared in accordance with FAC Chapter 5J-17.051 and all applicable Standards of Practice.

C. When performing as-built surveys, the surveyor and mapper shall obtain field measurements of vertical or horizontal dimensions of constructed improvements so that the constructed facility can be delineated in such a way that the location of the construction may be compared with the construction plans.

D. As-built survey maps shall clearly show by symbols, notations, or delineations, those constructed improvements located by the survey.

E. The vertical and horizontal accuracy of the measurements made shall be such that it may be determined whether the improvements were constructed consistent with planned locations.

F. The Surveyor shall be responsible for the location, establishing or replacement of Vertical and Horizontal Survey Control Points.

G. Complete topographic and boundary survey for the project shall be signed and sealed by the Florida Licensed Professional Surveyor and Mapper as part of the as-built plans. All information required of a boundary survey shall be contained on the as-built plans to include the legal description of the site, easements and rights-of-way abutting the site and location of all surface facilities recorded by a PSM. All utilities within the property shall be properly shown, along with their associated elevation and clearance.

1.0.8. CERTIFICATION

A. All as-built drawings are to be certified to the City of Opa-Locka Public Works Department and all sheets are to be signed and sealed as previously outlined.

B. As-builts shall include a signed, sealed, and dated certification statement by the responsible Florida Licensed Professional Surveyor and Mapper that all measurements were recorded under his direction and are accurate.

C. Any civil drawings that are not surveyed shall also be included in the set and shall be signed and sealed by the Engineer of Record.

D. As-builts that contain electrical, mechanical, or structural work shall also be signed and sealed by the Engineer of Record to indicate that the work was constructed as designed.

E. It is the responsibility of the Contractor to check the as-builts for errors and omissions prior to submittal to the City and certify in writing that the as-builts are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, indicate the size, depth, and voltage in each conduit.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

01730 OPERATING AND MAINTENANCE INSTRUCTIONS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Prepare Operating and Maintenance (O & M) Manual covering all equipment and systems provided under this project.

B. Instruct the City's personnel in the operation of equipment and maintenance provided under this project.

C. This Section covers the services of the manufacturer's representatives and special coordinating services required of the Contractor that shall apply during construction, facilities startup, and training of the City's personnel for facilities operation.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.2. SUBMITTALS

A. Not later than 30 days after the start of Construction, submit for review and approval by the Engineer two copies of a preliminary draft of the O&M manual, showing the proposed format and an outline of the contents.

B. Throughout construction, prepare O&M sections for equipment and systems when such equipment and systems, and shop drawings and technical data therefor, are approved. Within 30 days following receipt of the Engineer’s approval of the final shop drawing submittal, submit, in duplicate, draft of complete O&M Manual for review and approval of Engineer.

C. Within 30 days after receipt of Engineer’s review comments, make required revisions and submit in final form two copies of the O & M Manual for final approval.

D. The Contractor shall inform all Subcontractors and manufacturers of the requirements herein and include the following services in his costs for the work. Where a minimum amount of time is stated in the Technical Specifications for manufacturer's services, any additional time required to perform the specified services shall be at no additional cost to the City.

1.0.3. FORM, FORMAT AND SUBMITTALS CONTENTS

A. Operating and maintenance manuals will be used for use by the City personnel in the operation and maintenance of the various systems.

B. The City shall be furnished with one set of any special tools required for servicing for

each type of equipment actually furnished. These tools shall be provided to the Pump Station Maintenance Division.

C. Prepare data in the form of an instructional manual for use by the City personnel.

D. Format:

1. Size: 8½ in. x 11 in.

2. Paper: 20-pound minimum, white, for typed pages.

3. Text: Manufacturer's printed data or neatly typewritten.

4. Drawings:

a. Provide reinforced punched binder tab, bind in with text.

b. Fold larger drawings to the size of the text paper.

5. Provide fly-leaf for each separate product, or each piece of operating equipment.

a. Provide typed description of product, and major component parts of equipment.

b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:

a. Title of Project.

b. Identify of separate structure as applicable.

c. Identity of general subject matter covered in the manual.

E. Binders

1. Commercial quality three-ring binders with durable and cleanable plastic covers.

2. Maximum ring size: As required (Minimum 1½-inches).

F. Content of Manual

1. Neatly typewritten table of contents, arranged in a systematic order.

a. Contractor, name of responsible principal, address and telephone number.

b. A list of each product required to be included, indexed to the content of the volume.

c. List, with each product, the name, address and telephone number of:

1) Subcontractor or installer.

2) Maintenance Contractor, as appropriate.

3) Identify the area of responsibility of each.

4) Local source of supply for parts and replacement.

5) Identify each product by product name and other identifying symbols as set forth in Contract Documents.

G. Product Data:

1. Include only those sheets which are pertinent to the specific product.

2. Annotate each sheet to:

a. Clearly identify the specific product or part Installed.

b. Clearly identify the data applicable in the installation.

c. Delete references to inapplicable information.

H. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:

a. Relations of component part of equipment and system.

b. Control wiring, schematic wiring, and flow diagram.

2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.

3. Do not use Project Record Documents as maintenance drawings.

I. Written text, as required to supplement product data for the particular installation:

1. Organize in a consistent format under separate headings for different procedures.

2. Provide a logical sequence of instructions for each procedure.

J. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for City's personnel, give:

a. Proper procedures in the event of failure.

b. Instances which might affect the validity of warranties or bonds.

1.0.4. MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and tests.

c. Complete nomenclature and commercial number of all replaceable parts.

2. Operating Procedures:

a. Start-up, break-in, routine and normal operating instructions.

b. Regulation, control, stopping, shut-down, and emergency instructions.

c. Special operating instructions.

3. Maintenance Procedures:

a. Routine operations.

b. Guide to "trouble shooting".

c. Disassembly, repair, and reassembly.

d. Alignment, adjusting, and checking.

4. Servicing and lubrication schedule:

a. List of lubricants required.

5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, illustration, as drawings and diagrams required for maintenance.

a. Predicted life of parts subject to wear.

b. Items recommended to be stocked as spare parts.

8. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

9. Other data as required under pertinent sections of specifications.

B. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts

a. Function, normal operating characteristics, and limiting conditions.

b. Performance curves, engineering data and test.

2. Switchgear, transformers, and motor control centers.

a. Coordination summary.

b. Relay settings.

c. High voltage switch instructions.

d. High voltage cable termination and splice instructions.

3. Operating procedures:

a. Routine and normal operating instructions.

b. Special operating instructions.

4. Maintenance procedures:

a. Routine operations.

b. Guide to “trouble-shooting”.

c. Disassembly, repair and reassembly.

d. Adjust and checking.

C. Prepare and include additional data when the need for such data becomes apparent during instruction of City's personnel.

D. Additional requirements for operating and maintenance data: The respective sections of Specification.

1.0.5. SUBMITTAL OF MANUALS

A. Two draft copies of the complete operating and maintenance manual shall be submitted for review by the Engineer within 30 calendar days after approval of all shop drawings. One copy will be return to the Contractor within 30 days after receipt by the Engineer.

1.0.6. POSTED OPERATING INSTRUCTIONS

A. General: Operating instructions and diagrams shall be prepared for posting near the equipment. Posted operating instructions shall be photographic or equal non-fading reproductions framed under glass encased in non-discoloring plastic and shall be mounted in location directed. Copies of the posted operating instructions shall also use with the operating and maintenance manuals as a basis in training employees in the operation and maintenance of systems and related equipment installed.

B. Contents: Posted operating instructions shall consist of simplified, consolidated equipment, control and power diagrams graphically representing the entire system and actual equipment installed, including concise written instructions on how to start and stop systems, what settings and conditions are to be observed and what control adjustments are to be made or maintained by the operation.

1.0.7. MANUFACTURES'S NAMEPLATES

A. Each major component of equipment to have manufacturer's name, address, model number and rating on a plate securely affixed in a conspicuous place. Nameplate of a distributing agent will not be acceptable in lieu of manufacturer's nameplate.

B. Nameplate shall be die-stamped, engraved, or etched to guarantee long term legibility.

1.0.8. GUARANTY/WARRANTY

A. The Contractor shall guarantee that all new equipment has the capacity specified and that it will operate without excess noise or vibration.

B. Contractor shall furnish a written guarantee covering all workmanship and materials for a period of one (1) year, from the date of acceptance. This shall include an agreement to repair or replace, at his expense, all defects that may appear in that time, which in the opinion of the Engineer, are due to defective workmanship or materials.

C. Copies of factory warranties on all equipment furnished shall be submitted with the above described, written guarantee period, and included in maintenance manuals.

1.0.9. OPERATING AND MAINTENANCE RESPONSIBILITY

A. Contractor shall provide all required service and maintenance on all equipment installed under this contract for one (1) year following final acceptance or the beginning of beneficial use by the City. The starting date of one (1) year service period shall be determined by the City. Included in the service and maintenance to be provided during this one (1) year period, shall be the following:

1. All required lubrication, adjusting belt tensions, eliminating excessive noise and vibration.

2. Correcting all electrical and mechanical faults, recording all permanent installed gauge meter and temperature readings.

3. General service items, including the answering of service calls.

B. Service during construction:

1. General: Competent and experienced technical representatives shall represent the manufacturers of all equipment and systems as many days as may be necessary to resolve assembly or installation problems at the worksite which are attributable to, or associated with, the equipment furnished. This requirement applies to manufacturers of all equipment furnished, whether or not specifically set forth in the Technical Specifications.

2. Manufacturer's Certificate of Proper Installation: Where called for in the Technical Specifications, the manufacturer's representative shall provide a certificate stating that the equipment or system has been installed in accordance with the manufacturer's recommendation and has been inspected by a manufacturer's authorized representative, that it has been serviced with the proper initial lubricants, that applicable safety equipment has been properly installed, and that the proper electrical and mechanical connections have been made.

C. Functional testing assistance:

1. Where functional (or run) testing is called for on the Technical Specifications, the manufacturer's representative shall assist with the initial test, which shall include checking for proper rotation, alignment, speed, excessive vibration, and noisy operation. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative. The previously specified Manufacturer's Certificate of Proper Installation shall include the statement that proper adjustment has been made and that the equipment or system is ready for plant startup and operation.

2. The Contractor, as applicable to the equipment furnished, shall state in writing that all necessary hydraulic structures, piping systems, and valves have been successfully tested; that all necessary equipment systems and subsystems have been checked for proper installation, started, and successfully tested to indicate that they are all operational; that the systems and subsystems are capable of performing their intended functions; and that the facilities are ready for startup and intended operation.

3. Training of Owner's Personnel:
Where called for in the specifications, the manufacturer's representative shall provide detailed instructions to the City personnel for operation and maintenance of the specified equipment. These training services shall include pre-startup

classroom and onsite equipment instruction and/or post-startup classroom and onsite equipment instruction, as stated in the specifications.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Where the City has obtained various permits for this Project, copies will be appended at the rear of the Specifications.

B. The Contractor shall familiarize himself with, and comply with, all requirements of these permits and their issuing authorities. All other necessary permits shall be obtained by the Contractor.

C. The Contractor's particular attention is called to any special conditions of the permits relating to construction procedures, excavation and backfill requirements, open trench restrictions, asphalt concrete pavement restoration, turbidity controls, and all other general and special conditions. In the event any of the conditions of the permits are in conflict with the requirements of these Specifications, the more stringent conditions of the permits shall take precedence.

D. Any deviations from the Plans, Specifications or permits appended thereto, must first be approved by the Engineer even if approval for the change has been given by the permitting agency.

E. The Contractor shall assume throughout the life of the Contract all obligations and responsibilities imposed on the City as permittee of the aforementioned permits. All expenses necessary for compliance with the regulations and requirements of each permitting agency and its permit shall be borne by the Contractor and shall be included in his overall bid price.

F. The cost of any fees such as impact fees, inspection fees, etc. and the cost paid for all required permits shall be borne by the City. The Contractor shall pay the required fees, obtain the permit(s) and then upon submission of proof of cost to the City, be reimbursed for said cost out of the Permit Fee Dedicated Allowance Item. This shall apply only to required permits and fees. Permits obtained or fees paid for the advantage of the Contractor or non-required permits obtained for whatever reason shall not be reimbursed. The necessity or non-necessity of a permit or fee shall be determined by the Engineer whose word shall be final. As specified in the paragraph above, all costs of compliance with the permit(s) shall be borne by the Contractor and included in his bid price.

G. All surveying required by the Project permits shall be done by the Contractor's Registered Professional Surveyor and Mapper (PSM) licensed to practice in the State of Florida.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall be responsible for providing the Engineer with Maintenance of Traffic (M.O.T.) plans for lane closures and/or detours for approval. These M.O.T. plans shall be produced by an individual employed by the Contractor and certified as "Work Zone Traffic Safety Supervisor" by the American Traffic Safety Service Association, ATSSA.

B. The Contractor shall be responsible for the maintenance of public streets and traffic control for the duration of the project. The cost of Traffic Control including the cost of any required off duty police officers shall be included under the appropriate bid item in the Proposal. If no bid item for this is included, said costs shall be included in other appropriate items of the bid and no extra compensation will be allowed.

1.0.2. REGULATIONS

A. As used herein, any reference to City of Opa-Locka, or its published regulations, permits and data, shall be synonymous and interchangeable with other recognized governing bodies over areas or streets, or their departments, published regulations, permits or data. The Contractor shall abide by all applicable laws, regulations, and codes thereof pertaining to maintenance of public streets, detour of traffic, traffic control and other provisions as may be required for this project.

1.0.3. MAINTENANCE OF TRAFFIC (M.O.T.)

A. The Contractor shall be fully responsible for the maintenance of public streets, detour of traffic (including furnishing and maintaining regulatory and informative signs along the detour route), traffic control, and other provisions throughout the Project as required by the City of Opa-Locka, Miami-Dade County Department of Transportation and Public Works (MDCDTPW) Traffic Division, Florida Department of Transportation (FDOT), or other governing agency. Traffic shall be maintained according to corresponding typical traffic control details as outlined in the MDCDTPW Manual. No street shall be completely blocked, nor blocked more than one-half at any time, keeping the other one-half open for traffic, without specific approval. Hard closures require approval from the City of Opa-Locka Transportation Department

B. An off-duty City of Opa-Locka police officer is required. Off-Duty Office phone number is (305) 681-1033.

C. The Contractor shall provide all barricades with warning lights, necessary arrow boards and signs, to warn motorists of the work throughout the project. Adequate approved devices shall be erected and maintained by the Contractor to detour traffic.

D. Excavated or other material stored adjacent to or partially upon a roadway pavement shall be adequately marked for traffic safety at all times.

E. The Contractor shall provide necessary access to all adjacent property during construction.

F. The Contractor shall be responsible for the provision, installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the MDCDTPW Manual. In addition, the Contractor shall be responsible for the resetting of all traffic control and information signing removed during the construction period.

G. Where excavations are to be made in the vicinity of signalized intersections, the Contractor is alerted that vehicle loop detectors may have been embedded in the pavement. Every effort has been made to show the approximate locations on the plans; however, the Contractor shall verify these locations by inspecting the site of the work and by contacting the Traffic Division. Any loop detector which is damaged by the Contractor, whether shown on the plans or not, shall be repaired or replaced by the Contractor, at his expense, and to the satisfaction of the Traffic Division.

H. The Contractor shall notify the Traffic Division twenty-four (24) hours in advance of the construction date, and forty-eight (48) hours in advance of construction within any signalized intersection.

I. Temporary pavement will be required over all cuts in pavement areas, and also where traffic is to be routed over swale or median areas. When the temporary pavement for routing traffic is no longer necessary, it shall be removed, and the swale or median areas restored to their previous condition.

J. Pavement markings damaged during construction shall be remarked, as required by the Traffic Division.

PART 2 – PRODUCTS

2.0.1. MAINTENANCE OF TRAFFIC PLANS

A. For construction within the City public right-of-way, the Contractor shall submit two sets of maintenance of traffic (MOT) plans for review to the City of Opa-Locka Public Works Department and the agency having jurisdiction.

B. MOT plans should be designed and developed by a certified MOT Specialist when normal traffic flow will be impacted causing unexpected or confusing situations in unclear travel path for motorist/pedestrians when entering non advanced warning work zones. MOT work zone traffic controls separate and protect workers, pedestrians and motorists delineating areas closed to traffic.

C. MOT plans must be designed in accordance with the requirements of the agency having jurisdiction.

D. MOT plans must be site-specific.

E. MOT plans will be reviewed and approved by the agency having jurisdiction.

F. MOT plans shall be in color.

PART 3 – EXECUTION

NOT USED

END OF SECTION

DIVISION 2 – SITE WORK

02210 SITE GRADING

PART – 1 GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall perform grading work within the limits, elevations and grades indicated on the plans and as specified herein.

1.0.2. RELATED WORK

A. Section 01031 “Grades, Lines and Levels”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

C. Section 02510 “Asphaltic Concrete Pavement”.

1.0.3. QUALITY CONTROL

A. The site shall be graded to the required elevations. Spot elevations are shown on the plans and the finished surfaces shall be uniformly sloped between these locations.

B. Suitable excavated material shall be used in the formation of embankments. The Contractor shall provide all additional fill material required to complete the embankments.

1.0.4. EXISTING CONDITIONS

A. Known underground, surface, and aerial utility lines and buried objects are based on best available data and indicated on the plans. Contractor shall verify all locations.

1.0.5. PROTECTION

A. Protect trees, shrubs, and lawns and other features remaining as part of final landscaping.

B. Protect bench marks, existing structures, fences, roads, sidewalks, paving, and curbs against damage from equipment and vehicular traffic.

C. Protect aerial, surface, or underground utility lines or appurtenance which are to remain.

PART 2 – PRODUCTS

2.0.1. FILL

A. Unless otherwise noted, suitable fill material shall be non-cohesive, non-plastic, granular mixture of local sand and lime rock, shall be free from vegetation, organic material or muck and shall contain not more than 8 percent material by weight which passes the No. 200 sieve. Broken concrete shall not be used in the fill. Fill material containing lime rock shall have sufficient sand to fill the voids in the lime rock, and no individual rocks or pieces of hard material that will not pass a 6-inch diameter ring shall be used in the fill; except that the upper 4-inches of all backfill or fills shall not contain any rock or hard material that will not pass a 3-inch diameter ring. All fill material shall be provided by the Contractor from any excess suitable on-site material or from off site sources, all subject to review and acceptance by the Engineer prior to use. The Contractor shall be responsible for determining the volume of material required for the site.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. Establish and identify required lines, levels, contours, and datums.

B. Maintain benchmarks, monuments, and other reference points. Re-establish if disturbed or destroyed at no cost to the City.

C. Before start of grading, establish the location and extent of utilities in the work areas. Notify utilities to remove and relocate lines which are in the way of construction.

D. Maintain, protect, reroute, or extend as required existing utilities to remain which pass through the work area.

3.0.2. REMOVAL OF TOPSOIL

A. Topsoil of horticultural value shall be stripped from areas of construction under this contract and stockpiled in area designated by Engineer. Said material shall be stockpiled separately from fill material.

B. Do not permit topsoil to be mixed with subsoil.

C. Do not strip topsoil when wet.

D. Do not drive heavy equipment over stockpiled topsoil.

3.0.3. ROUGH GRADING

A. Rough grade site to required levels, profiles, contours, and elevations ready for finish grading and surface treatment. Maintain the following:

1. Sodded areas: 4 ½-inches below finished grade elevation

2. Seeded areas: 6-inches below finished grade

3. Paved areas: 21½-inches below finished grade elevations

4. Shrub beds: 24-inches below finished grade elevations

5. Flower beds: 18-inches below finished grade elevations

6. Concrete sidewalks: 6-inches below finished grade elevations

B. Prior to placing fill material over undisturbed subsoil, scarify surface to depth of 6-inches.

3.0.4. GRADING AND COMPACTION

A. Fill material shall be placed in lifts not to exceed 8-inches and compacted to a density of not less than 95 percent of maximum density at optimum moisture as determined by ASTM D 1557. Fill material shall be within plus or minus 2 percentage points of optimum moisture content. The minimum density acceptable at any location within the pavement subgrade shall be as specified in Section 02745 "Asphaltic Concrete Pavement".

3.0.5. FINE GRADING

A. After structures, bases and pavements are completed and the yard piping trenches backfilled, the disturbed areas of the site shall be fine graded. All construction debris, regardless of size, shall be removed. The completed surface shall be shaped and sloped to drain away from the structures. The completed surface shall be within 0.1 foot of the elevations shown on the plans, unless otherwise accepted by the Engineer. Minor adjustments to line and grade may be required as the work progresses in order to satisfy field conditions.

3.0.6. SURPLUS MATERIAL

A. Remove surplus materials from site.

B. Dispose of surplus material at no cost to the City.

END OF SECTION

02220 EXCAVATION – GENERAL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work specified in this section consists of the removal of protruding objects as required to prepare the area of the proposed construction, and the removal and disposal of all product and debris which are not required to be salvaged or nor required to complete the construction.

1.0.2. RELATED WORK

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

3.0.1. REGULAR EXCAVATION

A. Regular Excavation shall include roadway excavation and borrow excavation, as defined for each.

B. Roadway Excavation shall consist of the excavation and the utilization or satisfactory disposal, of all materials necessary for the construction of the roadway, side ditches, etc., within the limits of the roadway right of way as show in the plans.

3.0.2. BORROW EXCAVATION

A. Borrow Excavation shall consist of the excavation and satisfactory utilization of material from authorized borrow pits. It shall include only material that is suitable for the construction of roadway embankments or of other work of constructing embankment covered by the contract and unsuitable material in borrow areas furnished by the City, which must be excavated as determined by the Engineer, in order to obtain the suitable material.

3.0.3. LATERAL DITCH EXCAVATION

A. Lateral ditches shall include inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right of way, as shown in the plans. Unless otherwise shown in the plans all excavation in that portion of lateral ditches beyond the limits of the roadway right of way, including the sections where dressing is required as provided in 120-11.1, shall be classified as Lateral Ditch Excavation.

3.0.4. SUBSOIL EXCAVATION

A. Where muck, rock, clay or other material within the limits of the roadway is unsuitable in its original position, the Contractor shall excavate such material to the cross sections shown in the plans or indicated by the Engineer, and shall backfill with suitable material, which shall be shaped to conform to the required cross sections. Where the removal of plastic soils below the finished earthwork grade is required, a construction tolerance from the lines shown in the plans as the removal limits, of plus or minus 0.2 foot in depth and plus or minus six inches (each side) in width will be allowed.

3.0.5. TRENCH EXCAVATION

A. General

1. Design, Provide, and maintain shoring, sheeting and bracing as necessary to support the side of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed work.

B. Trench Excavation Plan: Prepare Trench Excavation Plan addressing the following topics:

1. Details or shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions.

C. Removal of Excavation Support

1. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill.

2. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed work, or adjacent property.

D. Trenches

1. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable state and local construction safety order, and federal requirements.

3.0.6. DEWATERING SYSTEMS

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

3.0.7. STOCKPILING EXCAVATED MATERIAL

C. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed work, if weight of stockpiled material could induce excessive settlement.

H. Disposal of Spoil

3.0.8. DISPOSAL OF SURPLUS AND UNSUITABLE MATERIAL

A. Ownership of Excavated Materials

1. Owner of all suitable excavated material shall remain in the City until the final job requirements for fill or backfill materials have been fulfilled. Unless otherwise provided by the plans or special provisions, any surplus materials then remaining and not needed for job requirements shall become the property of the Contractor and are to be disposed of by him/her, outside the right of way, to the satisfaction of the Engineer.

2. In urban or other areas where temporary storage of apparent excess suitable materials within the right of way may be impracticable, the Contractor may stockpile the materials outside the right of way in areas provided by him/her. Until stock materials are needed in the job or are declared surplus. With the written approval of the Engineer, the Contractor may dispose of such apparent excess

material with the stipulation that he shall replace any portion of the disposed material required to fulfill the actual job requirements, with equally suitable material, at his own expenses.

3. No extra compensation will be allowed for any re-handling involved under the provisions of this Sub-article.

B. General Requirements for Disposal: Excavated muck or other materials unsuitable for the roadway construction shall be disposed of as shown in the plans or, if the plans do not indicate the disposal, the materials shall become the property of the Contractor and shall be disposed of by him/her outside the right of way.

C. Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.2 when approved by the Engineer, in rural undeveloped areas muck (A-8 material) may be placed on the slopes, or may be stored alongside the roadway, provided there shall be a clear distance of at least six feet between the roadway grading limits and the muck, and the muck shall be so dressed as to present a reasonably neat appearance. In addition, disposal of this material by placing on the slopes may also be permitted in developed areas where, in the opinion of the Engineer, this will result in an esthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where muck or other unsuitable material is permitted to be disposed of inside the right of way limits, such material shall not be placed such as to impede the inflow or outfall of any channel or of side ditches. The Engineer shall determine the limits adjacent to channels within which such materials shall no be placed.

D. Disposal of Paving Materials: Unless otherwise indicated in the plans, paving materials excavated in the removal of existing pavements, such as paving brick, asphalt block, concrete slab, lime-rock, sidewalk, curb and gutter, etc., shall become the property of the Contractor and shall be disposed of by him/her outside the right of way. If the materials are to remain the property of the City, they shall be placed in neat piles as directed.

E. Disposal Areas: Where the plans or specifications require the Contractor to dispose of excavated materials outside the right of way, and the disposal area is not indicated in the contract documents, the Contractor shall furnish the disposal area without additional compensation. Areas provided by the Contractor for disposal of removed paving materials shall be out of sight of the project and at least 300 feet from the nearest roadway right of way line of any State-maintained road. The 300-foot limitation will not apply, however, if the materials are buried.

1.0.10 USE OF PUBLIC STREETS

A. Ownership of use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Any earth or other excavated material spilled from trucks shall immediately be removed by the Contractor and the streets cleaned to the satisfaction of the governing authority.

B. The City has not made any attempt to define the equipment to be used in transporting the excavated material since this may vary, however, the Contractor shall abide by the following general requirements:

1. Transport vehicles must be of the type(s) approved for this application by the political jurisdictions involved. General requirements are that the vehicles have watertight bodies that they be properly equipped and fitted with seals and covers to prohibit material spillage or draining, and that they be cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within all legal weight limits and operated safely within all traffic and speed regulations.

2. Access to businesses, schools and homes along the route of the work must be provided by the Contractor at all times.

3. Where traffic will pass over backfilled trenches before they are paved, the top of the trench shall be maintained with temporary asphalt that will allow normal vehicular traffic to pass over.

END OF SECTION

02230 CLEARING AND GRUBBING

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Unless otherwise shown in the plans, Standard Clearing and Grubbing shall be done within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right of way ditches, etc.

2. All areas where roadway embankments will be constructed.

3. All areas where structures will be constructed, including pipe culverts and other pipelines.

4. Any other areas specifically called for on the plans to be cleared and grubbed.

1.0.2. DEFINITIONS

A. Clearing shall consist of the cutting, removal and satisfactory disposal of all trees, stumps, brush, shrubs, rubbish and any other objectional material within the designated areas.

B. Grubbing shall consist of the removal and disposal of all stumps larger than 1-1/2 inches in diameter and other objectional material to a depth of at least 12 inches below the ground surface.

1.0.3. QUALITY ASSURANCE

A. In the course of the work, it may become to remove trees if they interfere with the work. Dade County and various municipalities have ordinances regulating the removal, relocation and pruning of trees in the public right-of-way, these ordinances shall be strictly adhered to. The Contractor shall obtain a permit from Dade County and/or other regulatory agencies having jurisdiction over the work area before removing, relocating and/or pruning any tree. The Contractor shall comply with all requirements and conditions of the permit.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. CLEARING AND GRUBBING

A. The Contractor shall remove and replace, where required all existing shrubbery, trees, grass, sprinklers, fences, signs, mailboxes, structures, roadways, sidewalks, curbs and similar items or structures in the way of all excavation necessary for the construction of the project.

B. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges. Where such cutting is for the purpose of pipeline installation, saw cutting shall be either parallel or at right angles with the centerline of the pipe.

C. To protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction, prior to proceeding with any work in the vicinity.

3.0.2. DEPTHS OF REMOVAL OF ROOTS, STUMPS AND OTHER DEBRIS

A. In all areas where excavation is to be done and where the excavated material is to be used in the construction of roadway embankment or roadway base or pavement; also in all areas where roadway embankment will be constructed; roots and other debris shall be removed to a depth of at least one foot below the ground surface. The surface shall then be plowed to a depth of at least six inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the roadway right of way shall be completely removed and disposed of by the Contractor.

B. Where excavation is done within the roadway area and where excavation for structures is done, all roots, etc., protruding trough or appearing on the surface of the completed excavation shall be removed to a depth of at least one foot below the excavation surface.

C. In borrow pits, material pits and lateral ditches, all stumps, roots, etc., protruding through or appearing on the surface of the completed exaction shall be removed or cut off below the finished excavation surface.

D. In borrow and material pits no clearing or grubbing shall be done to within three feet inside the right of way line.

E. Within all other areas where Standard Clearing and Grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be removed to a depth of one foot below the surface, but no plowing and harrowing will be required in these areas.

3.0.3. TREES TO REMAIN

A. As an exception to the above provisions, where so directed by the Engineer, desirable trees within the roadway and project site area shall be trimmed, protected and left

standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give a clear height of 16 feet above the roadway.

3.0.4. BOULDERS

A. Any boulders encountered in the roadway excavation, or found on the surface of the ground, shall be removed and placed in neat piles inside the right of way and adjacent to the right of way line.

3.0.5. SELECTIVE CLEARING AND RUBBING

A. Selective Clearing and Grubbing shall consist of removing and disposing of all vegetation, obstructions, etc., as provided above except that, where the Contractor so elects roots, etc., may be cut off flush with the ground surface. Stumps shall be completely removed and disposed of by the Contractor. Undergrowth shall be entirely removed except in specific areas designated by the Engineer to remain for aesthetic purposes. Desirable trees shall be trimmed, protected and left standing, with the exception of such trees as the Engineer may designate to be removed in order to facilitate right of way maintenance. Undesirable or damage trees (as so designated by the Engineer), shall be removed. Selective Clearing and Grubbing shall be done only in areas so designated in the plans.

3.0.6. PROTECTION OF ADJACENT AREAS

A. The Contractor shall protect areas shown on the drawings or designated by the Engineer of Record to remain protected from damage by construction operations by erecting suitable barriers of other acceptable means.

B. Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, etc., are to be carefully protected from damage and are not to be displaced.

3.0.7. DISPOSAL

A. All roots, vegetation and other refuse removed from the site during clearing and/or grubbing operations shall be legally disposed of by the Contractor. Where required, the Contractor shall obtain a permit from Miami-Dade County and/or other regulatory agencies having jurisdiction over the work area before burning any material on the site.

END OF SECTION

02314 EXCAVATION, BACKFILL AND FILL FOR STRUCTURAL FACILITY AND UTILITY SYSTEMS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included under this Section consists of furnishing material and equipment, and performing all labor necessary for excavating, backfilling, filling and compaction of areas to be occupied by facilities or utility systems to be constructed.

B. Plan For Excavation: Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the Engineer of Record for approval. The Contractor shall consider, and his plan for excavation shall reflect, existing utilities that are to remain, the equipment and methods to be employed in the excavation.

1.0.2. QUALITY ASSURANCE

A. All excavations shall conform with South Florida Building Codes, the State of Florida Trench Safety Act, OSHA requirements and the provisions herein. Excavations shall be executed in accordance with all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770) 48 hours prior to any excavation.

B. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami Dade County's Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

C. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required, granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements.

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D4318.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D4318.

3. Not more than 10 percent of weight shall be finer than 74-micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill.

C. Debris, broken paving, or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the City or designee. If sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL

A. Select backfill material specified herein shall meet all the general requirements for backfill material set forth in 2.01, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill material may be material resulting from trench excavation, if suitable in the opinion of the City or designee, carefully selected to comply with these requirements.

1. Trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the Engineer, at his discretion.

2. **Backfilling and compaction shall be kept up with the rate of pipe laying. Backfill consisting of the specified material shall be placed and properly compacted, to the degree specified hereinafter. Unless otherwise ordered or approved by the Engineer, in writing, no temporary fill, refill, or uncompacted fill shall be installed. Under no circumstances shall backfill material other than that specified or an approved equal be installed. Backfill shall be placed and compacted immediately after installation of piping.**

3. Where existing paving is damaged or removed, temporary paving, as specified hereinafter shall be placed the same day as the ditch backfill and compaction and

it shall be replaced with permanent paving within thirty (30) days, to the limits shown in the City's Standard Details or directed by the Engineer.

4. Backfilling and compaction of trenches will not be allowed until the work has been inspected by the Engineer, and the Engineer indicates that backfilling and compaction may proceed. Any work covered up or concealed without the knowledge or consent of the Engineer may be required to be uncovered or exposed at no cost to the City.

5. The Contractor shall backfill and compact all trenches and other excavations made in the process of installing the pipe. The cost of all backfilling and compaction shall be included in the price bid under the various Items. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes. Backfill to a point at least one (1) foot above the pipe shall be select backfill material not exceeding two (2) inches in diameter. Above this point, backfill shall be of material not exceeding six (6) inches in diameter.

6. Backfilling and compacting of material under and around the pipe and to one (1) foot above the crown shall be in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted to at least 98 percent of maximum density as determined by AASHTO Standard No T-180-74, "Moisture-Density Relations of Soils using a 10-lb. (4.54 Kg.) Rammer and an 18 in. (457 mm) Drop." The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Engineer.

7. Backfilling and compacting of material lying above a point one (1) foot above the crown of the pipe and below the pavement base or the surface of the ground if out of pavement shall be accomplished in layers not exceeding six (6) inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180-74 or such greater density as may be required by the governing authority over the area in which the work is performed.

8. A testing laboratory, designated by the City, will make periodic field tests to determine the density being obtained in each lift, or layer, of the backfill. The City will pay the cost for each test that indicates that the density obtained in the backfill meets or exceeds the specified percentage. Contractor shall pay the cost for each test that indicates that the density obtained in the backfill is insufficient and does not meet the specified percentage. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted in a manner approved by the Engineer, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results. The Contractor shall exercise proper care to ensure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the

natural water table if the "Alternate Method of Construction" is utilized. See Section 02220 “Excavation – General”.

9. Backfill and compaction shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed and compacted as soon as practical after the laying of the pipe.

10. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

11. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material at no additional cost to the City.

12. Suitable material in excess of all backfill requirements shall be removed from the work and disposed of by the Contractor. The cost for removal shall be included in the overall Project cost bid.

13. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of 1/2-inch except as otherwise directed by the Engineer. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location. The cost for replacement of gravel or rock stabilized driveways and roadways shall be included in the overall Project cost bid unless a specific Bid Item is established in the Quotation.

14. Backfill material shall consist of the suitable excavated material being stored for this purpose. Backfill material placed within one (1) foot of piping and appurtenances shall not contain any stones or rocks larger than two (2) inches in diameter, and no stones or rocks larger than 6 inches in diameter will be permitted in any backfill. Backfill material containing mangrove muck or other unsuitable materials shall not be used.

15. During the backfilling operation, care shall be taken to preserve the alignment and gradient of the installed pipe.

2.0.3. SUITABLE BACKFILL

A. Suitable backfill material shall be clean and free from all organic material, clay, marl or unstable materials, debris, lumps, broken paving, or other deleterious material. No rocks or stones larger than 3½ inches in diameter shall be allowed in any suitable backfill. Material for backfill may be material resulting from excavation, if suitable in the opinion of the City or designee.

2.0.4. STRUCTURAL FILL

A. Structural fill shall consist of an inorganic, non-plastic, granular soil containing less than 10% material passing the No. 200 mesh sieve (relatively clean sand or crushed limerock with a 2 inches max. particle size) with a Unified Soil Classification of GP, GW, SP, SPGM, SW-SM or SP-SM.

2.0.5. UNSUITABLE FILL AND BACKFILL MATERIAL

A. Unsuitable fill and unsuitable backfill material shall be all material not meeting the definition of Structural Fill, Suitable Backfill, or Select Fill and cannot be amended or blended in the field to meet the standard of one of these fills. Unsuitable Fill material may contain deleterious material including but are not limited to: cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material, organic matter, muck, loose sand, loose free shells, corals or skeletal remain of other marine invertebrates retained on the No. 4 sieve, or water sensitive clay minerals.

2.0.6. BEDDING MATERIAL

A. Bedding may be select backfill material, as specified above, if approved by the City or designee.

B. No. 57 stone may be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details.

C. Sand for bedding shall be dry screened. Sand shall be graded sand with 100% passing a ⅜ inch sieve and not more than 5% passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approved by the City or designee. Existing pipe bedding material may not be used.

2.0.7. NO 57. STONE

G. No 57 stone shall be crushed stone (or drain field limerock). Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines, and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4- inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10

No. 8	0 to 5

2.0.8. BALLAST ROCK

A. Ballast rock shall be composed of hard, durable, sound pieces having a specific gravity of not less than 2.65. It shall be crushed rock conforming to the following gradation:

Sieve size	Percent Finer by Weight
1-½ inch	100
¾ inch	30 to 75
½ inch	15 to 55
¼ inch	0 to 5
No. 8	0 to 5

2.0.9. STEEL – SHEET PILING

A. Steel sheet piling shall conform to the requirements of ASTM A572 "High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality," (AASHTO No. M223) or ASTM A328 "Steel Sheet Piling."

B. The Contractor will be responsible for design and selection. Structural plans for the sheet steel piling installation and the calculations for the required Section Modulus and the Sheet Piling Designation shall be prepared by a registered professional engineer licensed to practice in the State of Florida. Sealed plans shall be submitted to the Engineer for approval prior to installation of the piling system.

C. Structural steel shall meet the requirements of ASTM A36 "Structural Steel."

D. Whenever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures. Shoring system adequately anchored and braced to resist earth on which the support or stability of existing structures is dependent must be left in place at completion of work. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. The Contractor shall remove and replace, where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, guard rails, structures, roadways, sidewalks, curbs and similar items or structures in the way of the main and shall make all excavation necessary for the construction of the main, to the lines and grades shown on the Plans. Weeded areas shall be restored as specified in Section 02900 “Landscaping”, Care of Trees, Shrubs and Grass. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the gravity main. Unless specific bid items are provided in the Quotation form, the cost of removing and replacing any plantings or existing structures shall be included in the

price bid. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Engineer.

B. Clearing: The construction site shall be cleared of all obstructions and vegetation, including large roots and undergrowth, within 5 feet of the lines of excavation, in accordance with Section 02230 "Clearing and Grubbing". All debris created by this clearing operation shall be hauled from the site and disposed of by the Contractor.

1. All cleared materials shall be promptly removed from the work area and disposed of in an area provided by the Contractor, at no additional cost to the City. Accumulation of debris or stockpiling along the route of the work will not be allowed.

C. Removals: Complete all removals within the lines of excavation prior to beginning excavation. Where required, all existing shrubbery, trees, grass, sprinklers, fences signs, mailboxes, structures, sidewalks, curbs, utility poles, or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depths shown on the approved plans, but in all cases as required for construction, and as specified herein. All excavations shall be made by open cut. All existing utilities such as pipes, poles, and structures shall be carefully located, supported, and protected from injury; in case of damage, they shall be restored at the Contractor's expense.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. For structures, the Contractor shall maintain the bottom of the excavation firm and dry and maintain an elevation of the water one (1) foot below the concrete to be placed, by use of pumps, tremie or other acceptable method.

D. Pipe trench excavation shall be in accordance with the appropriate Standard Detail in the Miami-Dade County Public Works Manual

E. The Contractor shall excavate pipe trenches to a minimum of 6 inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

F. Not more than 100 feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Engineer.

G. If, in the opinion of the Engineer, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required. The cost of this extra excavation, and backfilling with select backfill material, shall be included in the price for pipe laying and no additional payment will be made for this work.

H. If the soil is still unsuitable after the additional excavation as prescribed above, and the Engineer authorizes "Overcut," the trench bottom shall be excavated further in one (1) foot increments and paid for as "Trench Overcut." See below 3.0.6. "Trench Overcut.

I. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12 inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6 inch clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

   For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

J. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable Local, State, and Federal requirements.

K. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material.

L. In areas where trench widths are not limited by site constraints the trench sides may be sloped to a stable angle of repose of the excavated material but only from a point one foot above the crown of the pipe. A substantially and safely constructed movable shield, "box" or "mule" may be used in place of sheeting when the trench is opened

immediately ahead of the shield and closed immediately behind the shield as pipe laying proceeds inside the shield.

M. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

N. Excavated material shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

O. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Suitable material in excess of backfill requirements shall be used on the site as directed by the City or designee, or removed at the Contractor's expense. Any pockets of organic matter, concrete or other unsuitable material encountered in excavating shall be removed and replaced with material satisfactory to the City.

P. The excavation of walls for forms will not be permitted.

Q. The trench wall shall be kept at a stable angle of repose to maintain trench widths within the limits hereinafter specified or shown on the Plans.

R. The trench, when in rock, shall be excavated to a width within the limits of the top of the pipe and the trench bottom so as to provide a clearance on each side of the pipe barrel, measured to the face of the excavation, of 12 inches. Rock or removal in the excavation shall be considered a part of the excavation and as such no additional payment shall be made therefore. Where excavation is in silt, the width of trench bottom shall be pipe O.D. plus two (2) feet with the trench walls being kept at a stable angle of repose. All pipe trenches shall be excavated to a level at least 12 inches below the outside bottom of the proposed pipe barrel.

S. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

T. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

U. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting when the trench is opened immediately behind the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe and backfilling and compaction.

V. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Plans, or as directed by the Engineer. All excavations shall be made by open cut. Any existing utilities such as pipes, cables, etc., shall be carefully supported and protected from damage, and in case of damage, they shall be restored at no cost to the City.

W. Excavation for other piping and appurtenances shall be sufficient to leave at least 12 inches clear between their outer surfaces and the embankment or sheeting that may be used to protect them.

X. Provide excavation support as necessary to support sides of excavations and prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work.

Y. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed Work, or adjacent property.

Z. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks and they shall not be placed on private property. In congested areas, such materials as cannot be stored adjacent to the trench or used immediately as backfill shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, in the opinion of the Engineer, it shall be removed immediately by the Contractor to a storage area.

AA. The Contractor shall temporarily store excavated material suitable for backfill in full compliance with the provisions of the permits. All mud, silt, debris and other material unsuitable for backfilling the trench shall be removed and legally disposed of offsite by the Contractor. The Contractor shall make his own arrangements regarding stock piling of excavated suitable material and storage and assembly space to properly and safely carry out the construction. Any agreements entered into by the Contractor and property owners shall hold the City harmless. Storage of excavated material shall not cause environmental problems and shall be performed at no additional cost to the City.

BB. Excavation for structures:

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the depths and dimensions shown on the plans, but in all cases as necessary for satisfactory installation.

2. Where pavements or sidewalks are cut, they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall, in general, be either parallel or at right angles.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists

prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

4. Where interlocking steel sheeting is used, the City may require that the sheeting be cut off at a level two (2) feet above the top of the installed pipe and that portion below the level be left in place.

5. Excavation for manholes and other piping appurtenances shall be sufficient to leave at least two (2) feet clear between their outer surfaces and the embankment or sheeting.

6. If, in the opinion of the Engineer of Record or the City, the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued two (2) feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the City that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired.

8. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

9. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

3.0.3. TRENCH STABILIZATION

A. No claim for extras or additional payment will be considered for cost incurred in the stabilization of trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, or other causes. In no event shall pipe be installed when such conditions exist and the Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation at no additional cost to the City.

3.0.4. SHEETING AND SHORING

A. Contractor shall be solely responsible for the design, installation, and maintenance of shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work. Design of shoring or other excavation support shall be provided by a Professional Engineer licensed in the State of Florida. Prior to trench excavation, a Trench Excavation Plan shall be prepared and shall address the following topics.

1. Details of shoring, sloping, or other provisions for worker protection from hazards of caving ground.

2. Design assumptions and calculations.

3. Methods and sequencing of installing excavation support.

4. Proposed locations of stockpiled excavated material.

5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.

6. Anticipated difficulties and proposed resolutions

B. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

C. For excavations five (5) feet deep or less, sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures. When an excavation is in excess of five (5) feet deep, the Contractor shall comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act." Method(s) of compliance used shall protect the workmen and the general public, prevent damage to this or adjacent work, structures, utilities, pavements, sidewalks, curbs, gutters and similar improvements both public and private, and provide for proper maintenance of traffic. The trench width may vary to accomplish this and to comply with the provisions of Florida Statutes Chapter 553, Part III, "Trench Safety Act," but only from a point one (1) foot above the top of the pipe.

D. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

E. Where wood sheeting or certain designs of steel sheeting are used, the City may require that the sheeting be cut of at a level two (2) feet above the top of the installed pipe and that portion below that level be left in place. If ordered left in place, sheeting and shoring shall be paid for under the appropriate Quotation Item.

F. If interlocking steel sheeting is used, the City may permit its complete removal in lieu of the cut-off, providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment. Any damage to the pipe bedding, pipe or pipe alignment shall be cause for rejection of the affected portion of the work.

G. In areas where trench widths are not limited by right-of-way and/or easement widths, property line restrictions, existing adjacent improvements, including pavements, structures and other utilities, and maintenance of traffic, the trench sides may be

sloped to a suitable angle of repose of the excavated material, but only from a point one (1) foot above the crown of the pipe.

3.0.5. MOVABLE SHIELD (MULE)

A. A substantially and safely constructed moveable shield or box, as approved by the Engineer, may be used in place of sheeting except where it is specifically called out on the Plans or in the Specifications to install sheeting. When using a shield, the trench is opened immediately ahead of the shield as pipe laying proceeds inside the shield. All construction in conjunction with using such a shield must be as approved by the Engineer, including excavation, installation of pipe, and backfilling and compaction. When a moveable shield or box is used, the installed pipe shall be secured to prevent it from moving when the box is moved.

3.0.6. TRENCH OVERCUT

A. Trench overcut provisions herein shall be used only under direct authorization by the Engineer.

B. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, and the Engineer authorizes overcut, the pipe trench shall be excavated further in one (1) foot increments until either a suitable foundation material is found, or the Contractor is directed by the Engineer to stop trench overcut operation and begin backfilling. In no case will trench overcut be more than 6 feet in depth, i.e., to a point 8 feet 6 inches below the bottom of the pipe.

C. Selected backfill, as defined in 2.0.1. “Materials” shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.7. DEWATERING

A. Any water which accumulates in the excavations for structures shall be removed promptly by means satisfactory to the Engineer of Record in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Pumps and engines for dewatering systems shall be operated with mufflers and at a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his drainage system.

B. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way or into any existing drainage structure or facility.

C. As per the Class V permit requirements to be secured by the Contractor, he/she is responsible for the transportation to, and safe disposal of, potentially contaminated groundwater as a result of the dewatering efforts. The safe disposal shall be made in accordance with local, State, and Federal regulations.

3.0.8. TRENCH RESTORATION

A. Trench restoration shall be per the applicable of Miami-Dade County Standard Details.

B. Mill and resurface minimum 1 inch in accordance with the restoration limits in Part 1 or as directed by the City of Opa-Locka Public Works Department. Prior to placing pavement, City Public Works inspection is required. If milled section crosses a pedestrian path or temporary pedestrian path/detour, an asphalt apron must be provided at transitions with all adjacent surfaces within the pedestrian crossing.

C. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½ inch, except as otherwise directed by the City or designee. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

3.0.9. TEMPORARY PAVEMENT

A. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City or designee, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with This excavation Work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City of Opa-Locka Public Works Department to allow lengths greater than 1,200 feet. At the sole discretion of the City of Opa-Locka Public Works Department, the allowable limits in the permit may be reduced due to unforeseen right-of-way conditions.

C. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City or designee until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all Work shall be completed in sections compatible with specified traffic maintenance procedures.

D. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed

over properly compacted limerock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of paving restoration.

E. Sand seal on the limerock base course will not be permitted in lieu of temporary paving.

F. Unless otherwise approved by the City or designee, temporary paving shall be placed within twenty-four (24) hours following the completion of backfilling.

G. If temporary asphalt is utilized, it shall be removed prior to placement of final asphalt surface.

H. Temporary restoration requires field approval by City of Opa-Locka Public Works Department Field Inspector

3.0.10. STOCKPILED MATERIALS

A. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.

B. Material suitable for backfill and not needed for backfill at the structure shall be stockpiled and later moved where needed.

C. Materials shall be stored and in such a manner that will not interfere unduly with City operations, traffic at the site, traffic on public roadways, or sidewalks and shall not be placed on private property. In congested areas, such materials that cannot be stored adjacent to the trench or used immediately as backfill shall be removed to other convenient places of storage acceptable to the City or designee at the Contractor's expense.

D. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.

E. Confine stockpiles to within easements, right-of-way, and approved Work areas. Do not obstruct road or streets.

F. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

G. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed Work if weight of stockpiled material could induce excessive settlement.

H. Do not place stockpiles within 50 feet of inlets, streams, wetlands, bodies of water, etc. unless permitted by the City or designee.

I. Stockpile side slopes shall be no steeper than 3 horizontal : 1 vertical unless approved by the City or designee. Top of stockpile shall have a minimum slope of no less than 5% to promote positive drainage.

J. Provide perimeter erosion control measures around stockpiles, located no closer than 5- feet from toe of slope, and stabilized stockpile surface with temporary seeding or other measures if stockpile will remain inactive for more than seven (7) days.

3.0.11. BACKFILL

A. Place and compact granular bedding and fill over pipelines and conduits. Density tests for determination of the specified compaction shall be made by a testing laboratory approved by the City or designee. Testing of compacted fill materials is required in accordance with these Specifications. If results of tests taken during the progress of the Work indicate compacted materials do not meet specified requirements, such defective Work will be removed, replaced, and re-tested as directed by the City or designee and at the Contractor's sole expense. Compacted fill is to be tested before proceeding with the placement of surface materials.

B. Backfilling of pipe trenches will not be allowed until the Work has been approved by the City or designee, pressure tested if required, and the City or designee indicates that backfilling may proceed. Any Work which is covered or concealed without the knowledge and consent of the City or designee shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the City or designee.

C. The Contractor shall backfill all trenches and other excavations made in the process of installing the culvert. The Contractor shall maintain the surface of the backfill free from major irregularities and potholes.

D. The Contractor shall maintain trenches free of debris, wood, rocks over 2 inches in diameter, and water.

E. Backfill shall be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after laying the pipe. On parts of the line where the groundwater level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

F. Pipe bedding and backfill shall be in accordance with the applicable Miami-Dade County Standard Details. Material shall be placed in maximum 6-inch layers. Each layer shall be thoroughly compacted to at least 98% of maximum density as defined by AASHTO Specifications T-180. The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results meet the requirements and are approved by the City or designee. Care shall be taken to preserve the alignment and gradient of the installed pipes.

G. A testing laboratory will make periodic field tests to determine the density being obtained in each lift of backfill. Testing shall be performed at a minimum frequency of one test every 10 feet. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting, and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

H. The Contractor shall exercise proper care to ensure no pipe will be broken or displaced by use of mechanical compacting equipment. Water shall be added as required to obtain optimum moisture content to facilitate compaction but ponding or inundation of backfill will not be permitted.

I. In the event sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

3.0.12. ALTERNATE METHOD OF CONSTRUCTION

A. A combination of conditions in the substrata, water table, method of disposal or regulatory agency requirements may be encountered during the course of the work which makes dewatering impossible, or possible only through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor may request permission to employ the following Alternate Method of Construction. The concurrence of the Engineer shall be obtained in writing and shall limit the use of the Alternate Method of Construction to such specific portions of the work as the Engineer shall determine.

B. The requirements set forth in other Sections of these Specifications shall establish the required standards of construction quality for this work. Use of the Alternate Method of Construction described hereinafter shall in no way be construed as relieving the Contractor of his basic responsibility for satisfactory completion of the work.

C. Under no conditions will any additional or increased payments be made to the Contractor for excavation, backfill, sheeting or any cost incurred for work or materials, or any other costs incurred as a result of the use of this alternate method of construction. The unit prices established in the Quotation shall be full payment for the various items of work.

D. Subject to all of the requirements stated herein, including written approval of the Engineer, construction will be permitted in accordance with the following specifications. All requirements of these Specifications shall apply to this construction unless otherwise specifically modified herein.

1. Removal of Water: The installation of pipe and appurtenances under water will be permitted and the dry-trench requirements of Section 6.06 "Removal of Water" will be waived.

2. Excavation: Excavation shall be performed in accordance with 3.0.2. "Excavation."

3. Pipe Bedding:

   a. Pipe bedding shall be placed from 6 inches below the outside bottom of the proposed pipe barrel up to the level of the lower one-third of the pipe barrel for pressure mains.

   b. The bedding material shall be pea rock, or drainfield limerock. Limerock screenings, sand or other fine organic material shall not be used.

   c. The bedding material shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fittings.

4. Backfill:

   b. After the pipe is installed, backfilling shall proceed in accordance with the provisions of 2.0.1. “Materials”

   c. Select backfill material shall be used to backfill around the pipe and to a level one (1) foot above the crown of the pipe.

   d. Under no circumstances will material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

E. If the Alternate Method of Construction is used, all backfill material, including specified pipe bedding material, shall be carefully lifted into the trench and not released to fall freely therein until the bucket or container is at or just above water level. Under no circumstances will backfill material be dumped or pushed into trenches containing water. Below existing water level, and to a point not more than 18 inches above the water level the backfill material shall be carefully placed in uniform layers, of equal depth on each side of the pipe. From a point not more than 18 inches above the water level, and below the pavement base or the surface of the ground, if out of paved areas, backfill material shall be placed and compacted for normal backfilling as provided in 2.0.1. “Materials” for compacted backfill.

END OF SECTION

02315 TRENCHING AND BACKFILLING FOR PIPING SYSTEMS

PART 1 – GENERAL

1.0.1. WORK INCLUDED

A. The work included under this Section consists of excavating, backfilling and compaction as required for the construction of the piping systems as specified herein. (See Section 02314 for excavation for structures.)

B. All excavations shall be executed in accordance with the South Florida Building Codes, the State of Florida Trench Safety Act (TSA), OSHA requirements and all applicable requirements of Section 01016, including notification of Sunshine State One-Call Center (1-800-432-4770), 48 hours prior to any excavation.

PART 2 – PRODUCTS

2.0.1. BACKFILL MATERIAL

A. Except where a 1:10 cement/sand or flowable fill concrete mix is required (See Section 02745), granular soil backfill materials shall be utilized. Suitable backfill material shall be clean, shall not be expansive nor have high organic content, shall be free of clay, marl, unstable materials, debris, lumps and clods, and shall meet the following requirements:

1. Maximum Liquid Limit shall not exceed 12 as determined by ASTM D 423.

2. Maximum Plasticity Index shall not exceed 35 as determined by ASTM D 424.

3. Not more than 10 percent of weight shall be finer than 74 micron (No. 200) U.S. Standard Sieve.

B. Backfill material containing limerock shall have sufficient sand to fill the voids in the limerock. No stones or rocks larger than 6-inches in diameter will be permitted in any backfill. Backfill material placed to a point at least one foot (1 ft.) above pipe and appurtenances shall be select backfill material not exceeding 2-inches in diameter. For PVC gravity sewers backfill material placed at least two feet (2 ft.) above pipe shall be select backfill material not exceeding 2-inches in diameter. In any case, above this point, but up to the upper 6-inches of the trench, backfill shall be of material not exceeding 6-inches in diameter.

C. Debris, broken paving or broken concrete shall not be used.

D. Material for backfill may be material resulting from excavation, only if it meets the above mentioned requirements, or if suitable in the opinion of the Department. If

sufficient suitable backfill material, including select backfill material, is not available from the site, additional material shall be furnished.

2.0.2. SELECT BACKFILL MATERIAL

Select backfill material specified in these specifications or required by the Plans shall meet all the general requirements for backfill material set forth above, and in addition, shall be free of any rocks or stones larger than 2 inches in diameter. Select backfill for copper tubing shall be limerock screenings or sand. Select backfill material may be material resulting from excavation, if suitable in the opinion of the Department, carefully selected to comply with these requirements.

2.0.3. BEDDING MATERIAL

Pipe bedding material shall consist of one of the following types of material, and accordance with the Department's Standard Details: (See Section UC-300 for Gravity Sewer Piping Foundations)

A. Bedding may be select backfill material, as specified above, if approved by the Department.

B. Crushed stone (or drainfield limerock) shall be used for bedding of piping (except for copper pipe) and/or manholes as shown on the Standard Details. Crushed stone shall consist of hard, durable, sub-angular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines and other deleterious materials. The stone shall conform to the requirements of ASTM C 33, Size No. 57 (3/4-inch rock) and be graded within the following limits:

Sieve size	Percent Finer by Weight
1-½ inch	100
1 inch	95 to 100
½ inch	25 to 60
No. 4	0 to 10
No. 8	0 to 5

C. Sand for bedding copper pipe shall be a dry screened sand. Sand shall be graded sand with 100 percent passing a 3/8-inch sieve and not more than 5 percent passing a No. 200 sieve.

D. Limerock screenings, sand or other fine material shall not be used for bedding.

E. All pipe bedding material shall be new, unless otherwise approve by the Department. Existing pipe bedding material may not be used.

2.0.4. BACKFILL UNDER MANHOLES AND METER VAULTS

Any excavation below the levels required for the proper construction of manholes or meter vaults shall be filled with Class C concrete. The use of earth, rock, sand or other materials for this purpose will not be permitted. (See Section 02314 for excavation for structures.)

PART 3 – EXECUTION

3.0.1. CLEARING

A. The Contractor shall perform all clearing necessary for the proper installation of all piping and appurtenances in the locations shown in the Drawings, in accordance with Section 02230, "Clearing and Grubbing".

B. Where required, all existing shrubbery, trees, grass, sprinklers, fences, signs, mail boxes, structures, sidewalks, curbs, utility poles or structures subject to damage resulting from the excavation should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

3.0.2. EXCAVATION

A. The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and depth shown on the Drawings. All excavations shall be made by open cut.

B. When the walls of the excavations are to be kept vertical and in order to protect the safety of workmen, the general public, this or other work or structures, or excavation walls, or pipe installation including materials encountered in the excavation which have a tendency to slough or flow into the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation shall be retained by steel sheeting, stabilization, grouting or approved methods. Said methods shall comply with the Trench Safety Act (TSA). Sheeting and shoring or other approved method shall be designed by a Professional Engineer licensed to practice in the State of Florida.

C. In areas where trench widths are not limited by right-of-way or easement widths, property line restrictions, existing adjacent improvements including pavements, structures, and other utilities, and maintenance of traffic, the trench sides may be sloped to a suitable angle of repose of the excavated material, but only from a point one foot above the crown of the pipe.

D. A substantially and safely constructed moveable shield or box, as approved by the Engineer of Record, may be used in place of sheeting, except where specifically called for on the Plans to install sheeting. Where a moveable shield or trench box, is used in place of sheeting and shoring, the trench shall be opened immediately ahead of the shield as pipe laying proceeds inside the shield.

E. Ladders or steps shall be provided for and used by workmen to enter and leave trenches.

F. Materials removed from the trenches shall be stored and disposed of in such a manner that they will not interfere unduly with traffic on public streets and sidewalks. In congested areas, such materials, cannot be stored adjacent to the trench nor used immediately as backfill, shall be removed to convenient places of storage. If any material is creating a public hazard or other unsafe condition, it shall be removed immediately to a storage area.

G. Materials suitable for use as backfill be hauled to and used in areas where not enough suitable material is available from the excavation. Material unsuitable for use in backfill shall be removed promptly and disposed of by the Contractor

H. Excavation for Pipes and Piping Appurtenances (See Section UC-300 for additional requirements for gravity sewer piping):

1. Clear, as stated above, all existing items or structures in the way of the proposed pipeline or structures and excavate as necessary to the lines and grades shown on the Plans.

2. Where pavements or sidewalks are cut they shall be cut by means of a mechanical pavement saw to form true and straight edges which shall in general be either parallel or at right angles with the centerline of the pipe.

3. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the Department.
4.
5. Excavate pipe trenches to a minimum of 6-inches below the outside bottom of the proposed pipe barrel to provide for the installation of the bedding material.

6. If, in the opinion of the Department, the soil at that depth is unsatisfactory as foundation material because it contains unsuitable marl, muck, organic matter, or other unsuitable material, the excavation shall be continued 2 feet deeper, except if a suitable foundation material is exposed at a lesser depth, further excavation will not be required.

7. If the soil is still unsuitable after the additional excavation as prescribed above, the trench bottom shall be excavated further in one foot increments in accordance with "Trench Overcut", below.

8. Sheeting and shoring shall be installed where necessary to control trench width, protect the workmen and the general public, and prevent damage to this or adjacent work, or structures.

9. Where wood sheeting or certain designs of steel sheeting are used, the Department may require the sheeting to be cut off at a level 2-feet above the top of the installed pipe and that portion below that level shall be left in place.

10. If interlocking steel sheeting is used, the Department may permit its complete removal in lieu of cut-off, providing removal can be accomplished without disturbing the bedding, pipe or alignment of the pipe. Any damage to the pipe bedding, pipe or alignment of the constructed utility caused by removal of sheeting shall be cause for rejection of the affected portion of the work. Not more than 100-feet of trench shall be opened ahead of pipe laying operations at one time unless a greater length of open trench is approved by the Department.

11. Trench widths, when measured at a point 12 inches above the top of the pipe, shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench width shall provide at least 6-inches clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used.

12. Excavation for appurtenances, such as manholes and valves, shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation or sheeting, if used, of not less than 12-inches. Manhole excavations shall be carried to sufficient depth to permit their construction on the undisturbed bottom of the excavation.

13. Excavation for thrust block shall be made in such a manner so that, when concrete is placed, it will bear against a firm, undisturbed, vertical trench wall with bearing are in accordance with the schedule shown in the Standard Details.

14. Selected backfill shall then be placed and compacted in 6-inch layers up to the level of the pipe bedding material.

15. When the pipe to be installed in a trench requires the pipe installers to work under and around the pipe, the Contractor may request the Department that he be allowed to exceed the 12" maximum clearance, specifying the clear distance desired. The decision of the Department in this regard shall be final.

16. The ends of existing mains shall be temporarily capped or plugged to keep them clean and the ends of all mains shall be temporarily anchored to keep the joints from blowing apart from internal pressure until the new mains can be reconnected to them.

17. In addition to specific construction methods specified, the general requirements in subsequent subsections, below, shall apply to the work of this project.

I. <u>Excavation for PVC Gravity Sewers and Service Laterals:</u>

1. The Contractor shall make all excavations necessary for the construction of the gravity sewers and service laterals to the lines and grades shown on the Plans, and in accordance with the Standard Details.

2. In stable soils, trench widths when measured to a point 12 inches above the top of the pipe shall provide a 12-inch maximum clearance on each side, between the outside of the pipe barrel and the face of the excavation, or sheeting if used. Minimum trench widths under the same conditions shall be 6-inches on each side for the pipe for 4-inch and 6- inch pipe, and 9-inches on each side of the pipe for 8-inch pipe and larger. Minimum trench widths are required to provide room for a man to place and compact the haunching and initial backfill material. Embedment material shall be Class I. (See Section UC-300)

3. In unstable soils (defined as peat, much or other organic soils, elastic silts and clays below the water table, and fine sands below the water level), trench widths when measured at a point 12-inches above the top of the pipe shall be a minimum of five (5) nominal pipe diameter in width. Slightly greater width are at the Contractor's option in order to accommodate his trenching equipment, but the pipe bedding material shall extend to the face of the excavation, or sheeting if used. Embedment material shall be Class II. (See Section UC-300)

3.0.3. TRENCH STABILIZATION

Trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes, shall be stabilized. In no event shall pipe be installed when such conditions exist. The Contractor shall correct such conditions so as to provide proper bedding or foundations for the proposed installation.

3.0.4. TRENCH OVERCUT

A. If, after excavating the trench to a depth of 2 feet 6 inches below the outside bottom elevation of the proposed pipe barrel, and the soil at that depth is still unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the pipe trench shall be excavated further in one-foot depth increments until a suitable foundation material is found. As a point of reference, it has been the Department's experience that, typically, trench overcut does not extend to depths more than 6 feet. However, the Department reserves the right to require trench overcut to depths up to 6 feet, i.e., to a point 8.5 feet below the bottom of the pipe.

B. Select backfill, as defined above, shall then be compacted in 6-inch layers up to the bottom of the proposed 6 inches of pipe bedding.

3.0.5. REMOVAL OF WATER

A. It is a basic requirement of these Specifications that excavation shall be free from water before pipe or structures are installed. However, it is realized that in certain sections

of the work this cannot be accomplished economically and the Contractor may request permission to use the "Alternate Method of Construction" defined below.

B. The Contractor shall provide all necessary pumps, underdrains, well point systems, and other means for removing water from trenches and other parts of the work including structures. The Contractor shall continue dewatering operations until the backfill has progressed to a sufficient height over the pipe to prevent flotation or movement of the pipe in the trench, so that the backfill is above the natural water level.

C. Where applicable, the Contractor shall be required to obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-away or into any existing drainage structure or facility.

D. Water from the trenches and excavation shall be disposed of in such a manner as will not cause injury to public health, to public or private property, to the work completed or in progress, to the surface of the streets, or to cause interference with the use of the same by public. Submit the proposed method of handling and disposal of trench waster for approval before starting the excavation.

E. The Contractor is cautioned that Dade County or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting, or limiting, the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. Obtain all necessary permits approving the location and proposed method of disposal before discharging water from any excavation into any portion of the public right-of-way, or into any existing drainage structure or facility.

F. Pumps and engines for dewatering systems shall be operated with mufflers and a minimum noise level suitable to a residential area. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

3.0.6. INSTALLATION OF BACKFILL

A. Backfilling of pipe trenches will not be allowed until the work has been approved by the Department, pressure tested if required, and the Department indicates that backfilling may proceed. Any work which is covered or concealed without the knowledge and consent of the Department shall be uncovered or exposed for inspection. Partial backfill may be made to help restrain the pipe during pressure testing, if previously authorized by the Department.

B. The Contractor shall backfill all trenches and other excavations made in the process of installing the pipe. He shall maintain the surface of the backfill free from major irregularities and potholes.

C. Select backfill material shall be placed under and around the pipe to one foot above the crown (or to two feet above crown for PVC gravity sewers) in 6-inch layers. Each

layer shall be thoroughly compacted to at least 90 percent of maximum density as defined by AASHTO Standard No. T-180, "Moisture-Density Relations of Soils using a 10-lb. (4.54 kg.) Rammer and an 18-in. (457 mm) Drop". The material in the ditch may be compacted by either hand tamper or a mechanized power tamper, provided the results obtained meet the continued approval of the Department. Particular attention and care shall be exercised in obtaining thorough support for the branch of all service connection fittings. Care shall be taken to preserve the alignment and gradient of the installed pipe.

D. Backfilling and compacting of material lying above a point one foot (or two feet for PVC pipe), above the crown of the pipe and below the pavement base or the surface of the ground, if out of pavement, shall be accomplished in layers not exceeding 9 inches in thickness. Each layer shall be thoroughly compacted with a powered hand tamper or a mechanized power tamper to at least 98 percent of maximum density as determined by AASHTO Specification T-180 or such greater density as may be required by the governing authority over the area in which the work is performed. A testing laboratory will make periodic field tests to determine the density being obtained in each lift, or layer, or the backfill. When compacted backfill fails to meet the specified percentage of maximum density as shown by test results, it shall be reworked and recompacted, and then retested. The reworking, recompacting and retesting of the backfill shall be repeated as many times as may be necessary to obtain compacted backfill with density meeting or exceeding the specified percentage as indicated by test results.

E. The Contractor shall exercise proper care to insure that no pipe will be broken or displaced through the use of the type of mechanical compacting equipment he selects. Water shall be added as required to obtain optimum moisture to facilitate compaction, but ponding or inundation of backfill will not be permitted. These ponding limitations shall not prohibit backfill in a wet trench up to the level of the natural water table if the "Alternate Method of Construction" is utilized.

F. Backfill shall in general be kept up with the rate of pipe laying. The backfill up to the springline of the pipe shall be placed as soon as practical after the laying of the pipe. On parts of the line where ground water level may be high enough to float the pipe, the placing of the backfill and the rate of pumping the trench shall be so controlled as to prevent the pipe from floating or moving from the line and grade shown on the Plans.

G. In the event that sufficient suitable material is not available at any point to properly backfill the trench, the Contractor shall transport suitable material from points of the line where such material is available or shall otherwise furnish suitable material.

H. Suitable material in excess of all backfill requirements and all unsuitable material shall be removed from the work and disposed of by the Contractor.

I. Within paved areas of trench excavation, the base and surfacing shall be reconstructed as specified under Section 02745, "Pavement Removal and Replacement".

J. Where cuts have been made through unpaved, stabilized rock roadways, driveways and parkways, surface restoration shall consist of 3 inches of compacted limerock overlaid by 3 inches of gravel or graded and washed rock with a maximum diameter of ½-inch, except as otherwise directed by the Department. The rock shall be installed over the entire width of the disturbed area and shall closely match the existing rock at each location. Several grades of rock may be required to attain this end, but it is not anticipated that more than one grade will have to be used at any one location.

K. Backfill for Structures: See Section 02314.

3.0.7. COMPACTION AND DENSITIES

A. Methods of control and testing of backfill construction to be employed in this work are:

1. Maximum density of the material in trenches shall be determined by AASHTO Designation T 180.

2. Field density of the backfill material in place shall be determined by AASHTO Designation T 238.

B. Laboratory and field density tests are necessary to establish compliance with the compaction requirements of these specifications. The Department will not accept projects for which successful laboratory and field density test results are submitted. Tests will be made at depths and locations to the satisfaction of the Department.

C. Trench backfill which does not comply with the specified densities, as indicated by such tests, shall be reworked and recompacted until the required compaction is secured.

3.0.8. ALTERNATE METHOD OF CONSTRUCTION

A. General:

1. A combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work which make dewatering impossible, or only possible through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor, with the concurrence of the Department may elect to employ the following alternate method of construction. The concurrence of the Department shall be obtained and the Contractor shall limit the use of the alternate method of construction to such specific portions of the work as determined applicable.

2. The requirements set forth in other sections of these Specifications shall establish the required standards of construction quality for this work. Use of the alternate method of construction described hereinafter shall in no way be construed as

relieving the Contractor of his basic responsibility for satisfactory completion of the work.

3. Subject to all of the requirements stated hereinabove, including approval by the Department, construction will be permitted in accordance with the following specifications.

B. Removal of Water: The installation of pipe, manholes and appurtenances under water will be permitted and the dry-trench requirements of "Removal of Water" will be waived.

C. Excavation: Excavation shall be performed in accordance with normal applicable excavation specifications.

D. Pipe Bedding for Ductile Iron and Vitrified Clay Pipe:

1. Pipe bedding shall be placed from 6-inches below the outside bottom of the proposed pipe barrel up to the level of the springline of the pipe barrel of gravity sewers and to the level of the lower one-third of the pipe barrel for force mains or water mains. The bedding material shall be washrock, drainfield limerock or approved material. Limerock screenings, sand or other fine organic material shall not be used.

2. The bedding material used shall be tamped and graded to provide a proper bedding for the pipe and shall then be shaped to receive the pipe. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting.

E. Bedding for PVC Pipe: The pipe bedding, haunching and initial backfill material shall conform to embedment material listed in Section UC-300 for either stable or unstable soil conditions as required, and shall be placed and compacted in as stated in "Installation of Pipe Bedding", above.

F. Backfill:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill around the pipe and to a level one foot above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all backfill material, shall be carefully lifted into the trench and released to fall freely therein when the bucket or container is near or at a moderate height above water level. Height of release shall be to the satisfaction of the Department. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the

pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities".

G. Backfill for PVC Gravity Sewers:

1. After the pipe is installed, backfilling shall proceed in accordance with the provisions of "Installation of Backfill", except that select backfill material or pipe bedding material shall be used to backfill to a level two feet above the outside top (crown) of the pipe. Under no circumstances shall material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.

2. If the Alternate Method of Construction is used, all embedment and backfill material, shall be carefully lifted into the trench and released to fall freely therein until the bucket or container is at or just above water level. Below the existing water level, and to a point not more than 18-inches above the water level, the backfill material shall be carefully placed into place in uniform layers, of equal depth on each side of the pipe. From a point not more than 18-inches above the water level, and below the pavement base or the surface of the ground if out of paving, backfill material shall be placed and compacted for normal backfilling as provided in "Installation of Backfill" and "Compaction and Densities

3.0.9. RESTORATION OF EXISTING SURFACES

Paved and grassed areas disturbed by the operations required under this Section shall be restored as indicated on the approved Plans and/or specified herein.

END OF SECTION

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct riprap composed of sand-cement or rubble (consisting of broken stone or broken concrete) as shown in the Standard Plans and in the Plans.

PART 2 – PRODUCTS

3.0.10. FILTER FABRIC

A. Use products listed on the FDOT's APL.

B. Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the City.

C. Place the filter fabric (fabric) at locations as shown in the Plans, in accordance with the manufacturer's directions. Place the fabric on areas with a uniform slope that are reasonably smooth, free from mounds, windrows, and any debris or projections which might damage the fabric.

D. Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers. Repair in accordance with the manufacturer's instructions.

E. The Contractor may sew the seams to reduce overlaps as specified in 985-3. Follow the manufacturer's instructions for all seams and overlaps.

3.0.11. PREPACKAGED SAND-CEMENT BAGS

A. Evenly proportioned sand and cement in the ratio of five cubic feet of sand to 94 pounds of cement. Material proportioned by mass shall use a sand density of 85 pounds per cubic foot.

B. Sealed package of 80 pounds of sand-cement in a bag.

C. Bag made of scrim-reinforced paper capable of holding the sand-cement without leakage.

D. Sand meets requirements of Section 902-3.3

E. Type I/II cement meets requirements of Section 921.

F. Prepackaged Sand-Cement Bags shall be one of the products listed on the FDOT's Approved Product List. Manufacturers seeking evaluation of their product shall submit

an application in accordance with Section 6. Include with the submittal a product data sheet, safety data sheet, product label, and a self-certified statement the product meets the requirements of this Section.

3.0.12. RUBBLE

A. Rubble (Bank and Shore Protection):

1. Provide sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone with a bulk specific gravity of at least 2.20. Ensure that stones are rough and angular.

2. For this application, use broken stone meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
670	290	60	2.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 85% of the material by weight is greater than Weight Minimum pounds.			

B. Rubble (Ditch Lining):

1. Use sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone or broken concrete with a bulk specific gravity of at least 1.90. Ensure that stones or broken concrete are rough and angular.

2. Use broken stone or broken concrete meeting the following gradation and thickness requirements:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
75	30	4	1.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds]. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 90% of the material by weight is greater than Weight Minimum pounds.			

C. Physical Requirements of Broken Stone and Broken Concrete:

1. Use broken stone and broken concrete meeting the following physical requirements:

Absorption (FM 1-T 85)	Maximum 5%
Los Angeles Abrasion (ASTM C535)	Maximum loss 45%*
Soundness (Sodium Sulphate) (AASHTO T 104)	Maximum loss 12%** (after five cycles)
Flat and elongated pieces	Materials with least dimension less than one third of greatest dimension not exceeding 10% by weight.
Dirt and Fines	Materials less than 1/2 inch in maximum dimension accumulated from interledge layers, blasting or handling operations not exceeding 5% by weight.
Drop Test***(EM 1110-2-2302)	No new cracks developed, or no existing crack widened additional 0.1 inch, or final largest dimension greater than or equal to 90% original largest dimension of dropped piece.

* Ensure that granite does not have a loss greater than 55% and that broken concrete does not have a loss greater than 45%.

** The Engineer may accept rubble exceeding the soundness loss limitation if performance history shows that the material will be acceptable for the intended use. The Engineer will waive the soundness specification for rubble riprap (broken stone) when project documents indicate it will be placed in or adjacent to water or soil with a sulfate content less than 150 parts per million and a pH greater than 5.0. Soundness is not required for broken concrete.

*** The Engineer will waive the Drop Test unless required to ensure structural integrity. Provide all equipment, labor and testing at no expense to the City. EM refers to the US Army Corps of Engineer's Specification Engineering Method.

PART 3 – EXECUTION

3.0.1. GEOTEXTILE FABRIC

A. Overlap adjacent strips of fabric a minimum of 24 inches, and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.

B. Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.

C. Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.

D. Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

3.0.2 SAND-CEMENT BAGS

A. Place the bags with their ends all in the same direction. Lay the bags with broken joints, in a regular pattern. Ram or pack the bags against each other so as to form a

close and molded contact. Remove and replace bags ripped or torn in placing with sound, unbroken bags. Then, thoroughly saturate all bags with water.

B. Immediately after watering, fill all openings between bags with dry grout composed of one-part Portland cement and five parts sand.

C. Use sand-cement bags for the toe walls if required. Fill the entire trench excavated for the toe walls with sand-cement bags.

3.0.3. RUBBLE

A. Dump rubble in place forming a compact layer conforming to the neat lines and thickness specified in the Plans. Ensure that rubble does not segregate so that smaller pieces evenly fill the voids between the larger pieces.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.2. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.3. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.4. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or Miami-Dade County Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.5. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance

with the requirements of the agencies having jurisdiction including but not limited to City of Opa-Locka, and Miami-Dade County.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.10. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.11. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being

compacted. Wetting and drying operations shall involve manipulation of the entire width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts

shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. 310-9.2 Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and

objectionable matter. If deemed necessary, the base shall be lightly sprinkled with water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is

completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the

edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays

experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

H. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

I. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

J. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

K. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

L. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

M. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material

must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

N. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

02505 CLEANING AND TESTING OF MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall clean and test the water main and sewage force main pipe, fittings and valves in accordance with these Specifications and to the satisfaction of the City.

B. The Contractor shall furnish all material, labor and equipment necessary to clean and test the water main and sewage force main pipe, fittings and valves.

C. Pipelines for Potable Water Mains shall be pressure tested for two (2) hours at 100 psi minimum test pressure in accordance with ANSI/AWWA C600 latest revision. No more than 5 psi drop over the duration of the test.

D. Pipelines for Sewage Force mains shall be pressure tested in accordance with AWWA Standard C-600, latest revision and the provisions of the City of Opa-Locka Public Works Manual. The minimum pressure for testing shall be two (2) hours at 100 psi.

E. The Contractor is advised that he is solely responsible for any damage caused to the main or it's lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

F. Potable water mains shall be disinfected and approved for use by the Health Department prior to placing the main in operation.

1.0.2. RELATED SECTION

A. Section 15995 “Disinfection of Water Main”.

1.0.3. QUALITY ASSURANCE

A. Testing shall be in accordance with ANSI/AWWA Standard C-600, latest edition, as modified herein.

B. Cleaning and testing shall be performed in strict accordance with these specifications.

C. The Contractor is cautioned that the City or other governing body having jurisdiction over the work location may have regulatory rules and ordinances prohibiting or limiting the discharge of water from any excavation into sanitary and storm sewer systems, or to canals and drainage ditches. The Contractor shall comply with all regulations of all governing agencies.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.0.1. GENERAL

A. As soon as the installation of each run of main is completed, including valves sufficient for control and anchored sufficiently to withstand any test pressure, the run shall be thoroughly flushed and pigged to remove all foreign matter from pipe in accordance with AWWA C651. The Contractor shall provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent property. Note that in some circumstances it may be necessary to install valves after the line segment has been pigged. In such in instance, permission to use this sequence of operations must be approved in writing by the City.

B. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections.

C. Flush pipe through flushing branches and remove branches after flushing is completed.

D. Operate new valves during flushing process at least twice during each flush.

E. The Contractor shall clean the inside of the main in intervals during its installation. The Contractor shall utilize pigging to clean the main unless otherwise specified herein or instructed by the City. A Bare Swab No. 5, density 1 lb./ft.3 by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal, shall be utilized for this work. Any damage to the pipe lining caused by pigging shall be repaired or replaced to the satisfaction of the City at the Contractor's sole expense. The Contractor shall furnish all materials and equipment necessary to clean the mains.

F. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

G. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City.

H. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

I. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet. Where a segment is being tested which includes more than one line valve to line valve section the maximum allowable leakage, defined below, shall be based on the length of the small segment being tested. All offset connections, fire hydrants, fire hydrant branch mains, and services between line valves shall be tested with the water main.

3.0.2. WATER FOR CLEANING AND TESTING

A. Water for cleaning and testing shall be furnished as specified in "Water Used in Construction" of Section 01100 "Special Project Requirements". The Contractor shall

furnish and install all necessary pumps, piping and fittings, including the corporation stop(s), to connect the section under test to the source of water. The test pump shall be a centrifugal or gear pump producing a steady pressure free of pulsation. If a construction meter is not furnished by the City, a meter or container, calibrated to the satisfaction of the City shall be provided by the Contractor. A Contractor-supplied meter or container must be approved in writing by the City. The test pressure shall be 100 psi and, as specified in AWWA C600, Section 5.2 “Hydrostatic Testing”, shall not vary more than ± 5 psi for the duration of the testing.

3.0.3. CLEANING

A. Unless otherwise approved by the Engineer, ductile iron pipe water mains and sewage force mains shall be cleaned at intervals not to exceed 30 lengths of pipe.

B. Unless otherwise ordered by the Engineer, cleaning shall be by pigging for lines of 36-inch nominal diameter and below. Lines of larger size are anticipated as being cleaned directly by construction personnel as the installation progresses. For all lines of nominal diameter greater than 24-inches the Contractor shall furnish for approval by the City a written shop drawing and procedure submittal detailing materials and methods to be used in the cleaning operation. This submittal shall be made in timely fashion so as not to delay construction and to permit sufficient time for review. If said submission is not approved, the Contractor shall immediately make such changes as are directed by the City and resubmit.

C. Prior to cleaning operations, the Contractor shall in writing, notify the City of the make, model and characteristics of the pig to be used. This description shall be sufficient to fully identify and describe the pig to be used. If the pig has not been previously approved for this use by the City, the submittal shall be a formal shop drawing and be accompanied by a letter from the manufacturer stating that the pig is designed to be used with lined pipe and will not, if properly applied, abrade or damage the lining.

D. All cleaning methods used by the Contractor shall be subject to approval by the Engineer, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

E. As soon as the installation of each run of pipe is completed, and prior to installation of valves on the main in positions which would interfere with or be damaged by the cleaning operation, the line shall be cleaned by use of a pig with characteristics as specified herein. The pig shall be driven through the line by water pressure and no cables, push rods or other mechanisms that might damage the pipe or lining shall be utilized in this operation.

F. Thorough pigging will be required, and operations shall be sufficient to remove all deleterious materials left in the pipe by construction and shall meet the Engineer's approval. If required by the City, pigging operations shall be scheduled to allow observation by the City and no extra compensation will be allowed for such scheduling.

G. The Contractor shall furnish, install and remove all piping necessary to carry out pigging operations, dispose of water and debris from the operation, and shall exercise care to prevent any damage to the surrounding area and adjoining or adjacent

properties. The Contractor shall furnish either a new or in new condition pig for cleaning operations and the City reserves the right to reject the pig and require provision by the Contractor of a new replacement at no extra charge to the City.

H. After the main has been cleaned to the satisfaction of the Engineer, any valves which could not be placed prior to pigging operations shall be installed using care to prevent entrance of deleterious materials into the cleaned main or valve body. Thereafter, the main shall be tested as specified below unless otherwise ordered or permitted by the Engineer.

I. The dirty water removed from the mains shall be disposed of by pumping out or ahead into the trench, or other approved location, and the Contractor shall exercise care to prevent any damage to the surrounding area and adjacent properties.

J. Volume flushing shall be of sufficient velocity to produce a scouring action in the main meeting the approval the City. The Contractor shall furnish and install all piping necessary to dispose of the flushing water and shall exercise care to prevent any damage to the surrounding area and adjoining and adjacent properties.

K. The Contractor is required to install nightcaps, plugs or other devices acceptable to the Engineer at the open ends of the pipe installation at the end the work day. This requirement shall apply to installations both above and below the water table.

L. The Contractor is advised that he is solely responsible for any damage caused to the main or its lining by cleaning operations and he shall be required to repair or replace, as required by the City, any damaged pipe or lining.

M. The pig for cleaning shall be a Bare Swab No. 5B; density, 1 lb./ft.^{3} by Knapp Polly Pig, Inc. 1209 Hardy Street, Houston, Texas 77020, 1-800-231-7205, or approved equal.

3.0.4. TESTING OF MAINS

A. Testing of ductile iron pipe for water mains and sewage force mains shall be in accordance with ANSI/AWWA C600, "Installation of Ductile-Iron Mains and Their Appurtenances" Section 5.2 Hydrostatic Testing, latest edition, as modified herein.

B. Pipelines for potable water mains shall be pressure tested at 120 psi for a minimum of two (2) hours in accordance with ANSI/AWWA C600 latest revision. The City may, at its option, allow for a 100 psi pressure test based on the plan design, condition of the existing system or material limitation. No more than 5 psi drop over the duration of the test. Final approval will be based on leakage test results. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any isolated section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

C. All fire hydrants, corporation stops, air release valves, flushing valves, and meter valves in the section being tested shall be opened and left open until water comes out of them, in order to remove as much air as possible from the line.

D. The Contractor shall furnish and install all necessary pumps, piping and fittings, including the corporation stops, to connect the section under test to the source of water. The test pump shall be centrifugal or gear pump producing a steady pressure free of pulsation. The test pressure shall be maintained throughout the duration of the test. Unless otherwise permitted by the Engineer, no static testing will be allowed.

E. During the hydrostatic test, the Contractor shall use a calibrated meter or other device to accurately measure the quantity of water necessary to maintain the test pressure on the gauge.

F. Water shall be pumped into the line through the meter up to the required pressure, and pumping shall be continued to maintain that pressure for a period of two (2) hours, or such longer period as the Inspector requires to inspect the line for leaks. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

G. Since the allowable leakage is defined in gallons per hour, testing shall be conducted in, at a minimum, two (2) independent one (1) hour test periods.

H. Testing shall continue for additional one (1) hour periods if the leakage increases during a previous to a subsequent test period, even if the leakage is within the allowable amount, until the leakage stabilizes or decreases.

I. The maximum allowable leakage for water mains and sewage force mains shall be determined by the following formula from the ANSI/AWWA C600:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: L = allowable leakage in gallons per hour
S = length of pipeline tested in feet
D = nominal diameter of the pipe in inches
P = average test pressure during the leakage test, in pounds per square inch gage

No pipe installation will be accepted if the leakage is greater than that determined by the above requirements. The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his/her representative.

J. The Contractor shall locate and repair all leaks until the leakage is reduced to the limits specified. The Contractor may use the leak detector belonging to the City but shall reimburse the City for the actual cost of the operation of the instrument by City personnel. Any observed leaks or any obviously defective joints or pipes shall be repaired or replaced as directed by the Engineer, even though the total leakage is below that specified above.

K. The tests and repairs shall be continued or repeated until the Engineer is assured that the leakage from the section of line under test is less than the amount specified.

L. Testing of Connections:

4. Cut-in connections shall be pressure tested whenever possible. Cut-in connections that cannot be pressure tested shall be done under the supervision of City forces with a visual system pressure test to verify no leakage is present. Any system pressure test shall be pre-approved by the Engineer.

END OF SECTION

02510 ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the drawings, specified herein and as required for a complete installation.

B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by Contractor operations, including trenching for new utilities, as well as damage that may result from Contractor operations during the progress of the work.

C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.0.2. SUBMITTALS

A. The Contractor shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section 01300 “Submittals”.

1.0.3. QUALITY CONTROL

A. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

B. Asphalt Acceptance Standards: The following minimum defects identified by the City or designee must be covered by warranty (but not limited to):

1. Sunken pavement patches greater than or equal to one-quarter (¼) inch (measured by a twelve (12) foot straight edge).

2. Surface raveling or oxidation due to deficiencies with the asphalt material.

3. Poor workmanship.

4. Inadequate compaction per Standards and Specifications.

1.0.4. RESTORATION LIMITS

A. At a minimum, sidewalk, curb, gutter, and roadway restoration shall be in accordance with the requirements of the agencies having jurisdiction including but not limited to

City of Opa-Locka, Miami-Dade County, and FDOT.

B. The Contractor is responsible to restore the full lane width of two-lane roads when a trench is longitudinally cut within a lane. If the cut is in between two lanes, the Contractor is responsible to restore both lanes. If the cut impacts multiple lanes, all lanes impacted shall be restored. When a perpendicular cut is made crossing the pavement, a minimum of 25 feet width on each side of the cut, or to the intersection, must be restored by milling and resurfacing. For new developments, the Contractor shall restore the pavement from property line to property line.

C. At a minimum, the width of all asphalt repairs within the Work area shall extend at least 12 inches beyond the limit of the damage. Where the line for repaving for trenches extends 12-inches into the edge of the existing paving, repaving shall be to this edge only. Damage by the Contractor to the pavement beyond 12-inches into the edge of the existing paving will require the full lane be repaved.

D. The edge of the pavement shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the Work area shall be approved by the City or designee prior to commencing the Work.

E. Any base course or surface course beyond the restoration limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these Specifications, to the satisfaction of the City or designee.

F. Permanent pavement repair shall be with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the Specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

G. Five Year Moratorium Directive from City: If the road is under Moratorium, the Contractor is to restore the entire roadway width.

H. Final asphalt application requires milling and resurfacing full travel lanes or as directed by City of Opa-Locka Public Works Department Field Inspector.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Subbase: Limit gradation of the material within the limits of the area being stabilized to 97% passing 3½-inch sieve. Soil shall be clean, non-deleterious material. Subbase material supporting the roadway and shoulders shall have a minimum LBR of 40. The stabilized subbase shall be 12 inches, placed in maximum compacted lift thickness of 8- inches, and compacted to 98% of maximum dry density as per AASHTO T-180.

B. Limerock Base Course

1. The material used in limerock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor's option having a minimum of 70% calcium carbonate or magnesium carbonate; however, only one formation may be used on any contract.

2. Limerock base course shall have a minimum LBR of 100. Limerock base shall be twice the thickness of the existing adjacent base and shall be minimum of 12-inches thick and a maximum of 18-inch thick, placed in 6-inch lifts. Base material shall be compacted to a density of not less than 98% of maximum dry density as per AASHTO T-180 under all paved areas.

3. The limerock material shall contain no more than 0.5% of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

4. The maximum percentage of water sensitive clay material shall be three percent (3%).

5. At least 97% (by weight) of the material shall pass a 3½-inch sieve, and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

6. The limerock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces, lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to prevent proper bonding, finishing, or strength of the limerock base.

7. Limerock material shall be non-plastic, and the liquid limit shall not exceed 35.

C. Asphaltic Concrete

1. Bituminous Material: Asphalt cement, Viscosity Grade AC-20 or AC-30, shall conform with the requirements of FDOT Specifications, Section 916-1.

2. Coarse Aggregate: Coarse aggregate, stone or slag shall conform to the requirements of the FDOT Specifications, Section 901.

3. Fine aggregate: Fine aggregate shall conform to the requirements of FDOT Specifications, Section 902.3.

4. Mineral Filler: Mineral filler shall conform to the requirements of FDOT Specifications, Section 917-1 and 917-2.

5. Prime Coat: Unless otherwise indicated, the material used for the prime coat shall be cutback asphalt, Grade RC-70 or RC-250, and shall conform with the requirements specified in AASHTO Destination M 81. Unless otherwise indicated, the use of wither RC-70 or RC-250 shall be at the Contractor's option.

6. Tack Coat: The material used for the tack coat shall be Emulsified Asphalt, Grade RS-2 and shall conform with the requirements specified in AASHTO Designation M 140.

7. Where Type S Asphalt Concrete is specified in the Contract Documents, if approved by the City or designee, the equivalent fine Type SP Asphalt Concrete mixture (Traffic Level C) meeting the requirements of FDOT Specifications Section 334 may be selected as an alternate at no additional cost to the City or Owner. The equivalent mixes are as follows:

   Type S-I.....Type SP-12.5
   Type S-II.....Type SP-19.0
   Type S-III.....Type SP-9.5

2.0.2. TEXTURED PAVEMENT

A. "StreetBond SP150E Coating Material" refers to a high-performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by GAF, Inc. (Tel. 1-800-766-3411), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. "StreetBond Colorant" is a highly concentrated, high quality, UV stable pigment blend designated to be added to StreetBond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the Drawings. The same StreetBond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of StreetBond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer's Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture's original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with FDOT Specifications Section 6 along with the following documentation:

   1. Manufacturer's Specifications and procedures for materials and installation.

2. Manufacturer's certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer's Specifications and procedures has been tested in accordance with the ASTM E274, Skid Resistance of Paved Surfaces using a standard ribbed full-scale tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ASPHALT

A. General

1. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Department of Public Works, Traffic Engineering Division or designee.

2. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City or designee.

B. Subbase: Roadway subbase shall be stabilized to the minimum depth shown on the Drawings to a LBR not less than 40. Stabilizing shall be type C as defined in Section 160 of the FDOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the City or designee. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subbase will have a LBR not less than 40. Stabilizing material shall be mixed or blended in the subbase material by plowing, scarifying, disking, harrowing, blading, and mixing with rotary tillers until the mixed materials are of uniform bearing ratio throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 98% of maximum dry density as determined by AASHTO T-180.

C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the FDOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in maximum 6-inch lifts.

D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.

E. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. Wetting and drying operations shall involve manipulation of the entire

width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.

F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

G. Unless otherwise directed by the City or designee, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City or designee, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by re-clarifying, reshaping, adding base material where necessary and re-compacting, at no additional cost to the City or Owner.

I. Mixing Base and Subbase: If at any time the subbase material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subbase and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the FDOT Specifications.

K. Asphaltic Concrete: The spreading, compacting, and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the FDOT Specifications to the thickness indicated on the Drawings.

L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard and perform the Work in accordance with Section 300 of the FDOT Specifications.

M. Connections with Existing Facilities Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the City or designee. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt

concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

N. Surface Tolerance

1. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds.

2. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

3. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

4. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

5. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the City or designee.

O. Weather Conditions: Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

P. Protection of Structures and Adjustment of Appurtenances

1. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

2. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

3. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any

delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

Q. Pavement Warranty: Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

R. The pressure distributor used for placing the tack or prime coat shall be equipped with pneumatic tires having sufficient width of rubber in contact with the road surface to avoid breaking the bond of or forming a rut in the surface. The distance between the centers of openings of the outside nozzles of the spray bar shall be equal to the width of the application required, within an allowable variation of 2-inches. The outside nozzle at each end of the spray bar shall have an area of opening of not less than 25 percent, nor more than 75 percent in excess of the other nozzles which shall have uniform openings. When the application covers less than the full width, the normal opening of the end nozzle at the conjunction line may remain the same as those of the interior nozzles.

S. Application Temperatures: For asphalt cement Viscosity Grade AC-5, the application temperature shall be between 300 degree and 350 degree F; for emulsified asphalt, between 100 degrees and 170 degrees F; and for cut-back asphalt, between 175 degree and 275 degree F.310-9.3 Uniformity of Distribution: Special precautions shall be observed to assure that an even and uniform distribution of bituminous material will be obtained, and the distributor shall be so adjusted and operated as to maintain uniform, even distribution of the type of material being applied. Excessive deposits of bituminous material upon the road surface caused by stopping or starting the distributor, by leakage or otherwise, shall be immediately removed.

T. When the prime or tack coat is applied adjacent to curb and gutter, or any other concrete or special pavement surface (except where they are to be covered with a bituminous wearing course) such concrete surfaces shall be protected by heavy paper or other protective material while the prime or tack coat is being applied. Any bituminous material deposited on such concrete surfaces shall be removed immediately.

U. No bituminous material shall be applied when the air temperature is less than 50 degree in the shade, or when the weather conditions or the condition of the existing surface is unsuitable. In no case shall bituminous material be applied while rain is falling or when there is water on the surface to be covered.

V. After the base has been finished, the full width of surface shall be swept with a power broom supplemented with hand brooms and mechanical blowers prior to the application of the prime coat. Care shall be taken to remove all loose dust, dirt and objectionable matter. If deemed necessary, the base shall be lightly sprinkled with

water immediately in advance of the prime coat. The prim coat shall be applied to the full width of the base.

W. The temperature of the prime material shall be such as to insure uniform distribution. The material shall be applied with a pressure distributor as specified above. The amount to be applied shall be sufficient to coat the surface thoroughly and uniformly without any excess to form pools or to flow off the base. For lime rock base, the rate of application shall not be less than 0.10 gallons per square yard.

X. The roadway may be opened for use following the application of the prime material, and a light uniform application of clean sand shall be applied and rolled. The sand shall be non-plastic, shall be free from silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. After the sand covering has been applied, the surface will be opened to traffic.

Y. Asphalt Densities: The in place density of each course of asphalt mix construction, with the exceptions of patching courses, leveling and intermediate course less than one-inch thick or a specified spread rate less than 100 pounds per square yard, overbuild courses where the minimum thickness is less than one-inch, and open-graded friction course, shall be determined by the use of the Nuclear Density Backscatter Methods as specified by FM 1-T238 (method B). The required density of a completed course shall be at least 98 percent of the average density of the control strip.

3.0.2. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the

manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.3. TEMPORARY TRENCH REPAIR OR STABILIZATION

A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the Contractor shall install temporary trench repair, consisting of compacted base course and temporary asphalt.

B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

C. The width of trench repairs shall extend at least 12 inches each side beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.0.4. PAVEMENT MARKINGS

A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the Contractor during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the FDOT Specifications.

3.0.5. CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the Contractor shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.

B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the Contractor shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the Engineer. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or

emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.0.6. SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the Contractor.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Specifications.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the Engineer.

3.0.7. WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The Engineer will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.0.8. PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the Contractor shall adjust the covers of these improvements to conform to the proposed surface elevations.

C. In this effort, the Contractor shall be responsible for ensuring that appurtenances are brought to proper grade to conform to the finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving

operation. No additional payment will be made. Protect all covers during asphalt application.

3.0.9. PAVEMENT WARRANTY

A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period at the Contractor's sole expense.

3.0.10. INSTALLATION OF TEXTURED PAVEMENT

A. Applications of textured pavement include the following.

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of FDOT Specifications Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated/imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the City or designee will check the area at random location(s) for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e., all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was

installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Concrete pavement, curbs and sidewalk shall be constructed to the lines and grades and dimensions required for a complete installation as shown on the drawings and specified herein.

1.0.2. SUBMITTALS

A. Shop drawings for reinforcing, joint material and mix designs shall be submitted for review in accordance with the Section 01300 “Submittals”.

PART 2 – PRODUCTS

2.0.2. MATERIALS

A. All roadways are to be de-mucked or stabilized with geotextile material in accordance with the geotechnical report and City requirements.

B. Laboratory analysis shall be complete, and the material approved by the Engineer prior to placement.

B. Geotextile material: Woven fabric to be structurally prepared and placed as per manufactures written specification.

C. Sub-grade: limited to maximum six (6”) diameter clean non deleterious material Sub grade to be proof-rolled. Subgrade material supporting the roadway and shoulders shall have a minimum lime rock bearing (LBR) of 40. The stabilized subgrade shall be twelve (12) inches compacted to 98% of maximum dry density as per AASHTO-T-180.

D. Lime rock: The material used in lime rock base courses shall be material classified as either Miami Oolite Formation or Ocala Formation at the Contractor’s option having a minimum percentage of calcium or magnesium of 60; however, only one formation may be used on any contract. Lime rock base course shall have a minimum bearing ratio (LBR) of 100 and shall be minimum of eight (8) inches thick. Base material shall be compacted to a density of not less than 98% of maximum dry density as determined by AASHTO-T180 under all paved areas.

1. Composition:

a. The lime rock material shall contain not more that 0.5 percent of organic material or objectionable matter and shall show no significant tendency to air slake or undergo any chemical under exposure to weather.

b. Lime rock material shall contain not less than 70 percent of carbonates of calcium and magnesium. The maximum percentage of water sensitive clay material shall be three (3).

2. Gradation: At least 97 percent (by weight) of the material shall pass a 3 1/2-inch sieve and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

3. Quality:

   a. The lime rock material shall be uniform in quality and shall not contain cherty or other extremely hard pieces or lumps, balls or pockets of sand or clay size material in sufficient as to be detrimental to prevent proper bonding, finishing or strength of the lime rock base. Lime rock material shall be nonplastic, and the liquid limit shall not exceed 35.

   b. Lime rock material shall have an average LBR value of not less than 100.

E. Sidewalks:

1. The replacement of gray concrete sidewalks throughout the City shall be with the Miami-Dade County's sidewalk color standard, unless otherwise specified by any applicable City land use board, in accordance with Resolution 2019-30800.

2. The Public Works Director has the authority to determine on a street-by-street basis if replacement of sidewalks to Miami-Dade County's sidewalk color standard is appropriate.

2.0.1. CONCRETE

A. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this section suitable to the specific conditions of placement.

B. Cement:

1. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

2. Only one brand of cement shall be used in any individual structure unless approved by the Engineer. Cement which has become damaged, partially set, and lumpy or caked shall not be used the entire contents of the sack or container which contains such cement will be rejected. No salvage or reclaimed cement shall be used.

3. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

4. Slump shall not exceed six inches (6”).

5. Concrete for underground work shall be acid resistant cement and shall maintain a minimum compressive strength of 4000 psi in 28 days.

6. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

7. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

8. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected. The Contractor shall provide suitable means for storing and protecting the cement against dampness. Bags of cement which for any reason may become partially set, or which contain lumps of caked cement, shall be rejected. In no instance shall any portion of a bag of damaged cement, or a bag containing lumps of caked cement, be used. Cement salvaged from discarded or used sacks shall not be used. Different brands of cement, even if tested and approved, shall not be mixed during use, nor used alternately in any section of the work without written permission of the Engineer.

C. Aggregates:

1. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

2. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

3. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

4. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

5. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0. F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

6. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions

D. Water: Water shall be taken from a potable water supply and shall be fresh, clean and free from injurious amounts of oil, acid, alkali or organic matter.

E. Admixtures:

1. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

2. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

   a. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

   b. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day’s operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are “Eucon 37” or Plastol 5000 by the Euclid Chemical Company, “Master Rheobuild 1000 or Master Glenium Series” by BASF, and “Daracem 100 or Advaflow Series” by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

   c. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year’s duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are “Accelguard 80/90 or NCA” by the Euclid Chemical Company and “Daraset” by W.R. Grace.

d. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

3. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

F. Membrane Curing Compound: Membrane curing compound shall conform to the requirements of AASHTO Designation M 148, Type 1-clear, or type 2-white pigmented.

G. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the nonextruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

H. Reinforcing and Welded Wire Fabric: Reinforcing and welded wire fabric shall be 6"X6" – 10/10 steel bars to be used in curb & gutter and wire mesh in sidewalk.

2.0.2. CONCRETE PAVERS

A. Concrete pavers shall Miami-Dade County's color standard approved equal. Use of other colors to complement project design theme and/or match existing pavers' configuration require shall only be used with written approval from the City of Opa-Locka Beach Public Works Department.

B. All concrete pavers shall have a skid resistant finish.

C. Provide products supplied by a member of the Interlocking Concrete Pavement Institute (ICPI) as called for in the Drawings and/or as specified herein.

D. Concrete pavers shall conform to the requirements of ASTM C936.

E. Concrete pavers shall have an average compressive strength of 8,000 psi with no individual unit under 7,200 psi.

F. Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C140.

2.0.3. TEXTURED PAVEMENT

A. “Street Bond SP150E Coating Material” refers to a high performance premium coating material consisting of epoxy modified acrylic polymers blended with sand and aggregate, and specially formulated by Integrated Paving Concept, Inc. (Tel. 800- 688-5652), for application on asphalt surfaces to provide a durable, long lasting color and texture to the asphalt surface.

B. “Street Bond Colorant” is a highly concentrated, high quality, UV stable pigment blend designated to be added to Street Bond SP150E coating system to provide color to the coating. The colors to be used shall be shown on the drawings. The same Street Bond Colorant shall be used in each SP150E coating layer to the asphalt surface. One pint of colorant shall be used with one pail of Street Bond coating material.

C. Use only patterned/textures pavement products listed on the Qualified Products List (QPL). Meet manufacturer’s Specifications for all pattern/texture templates, coating, and coloring material. Use only material that is delivered to the job site in sealed containers bearing the manufacture’s original labels. Material coating used to achieve the pattern/texture and/or color shall produce an adherent, weather resistant, skid resistant surface capable of resisting deformation to traffic. Paint and thermoplastic material must meet the requirements of this Specifications and FDOT Specifications Section 971, except that the requirements for Color and Retroreflectivity do not apply.

D. Manufacturers seeking approval for inclusion on the QPL must submit application and certifications in accordance with Section 6 along with the following documentation:

1. Manufacturer’s specifications and procedures for materials and installation.

2. Manufacturer’s certification with supporting test data and results that the patterned/textured pavement installed in accordance with the manufacturer’s specifications and procedures has been tested in accordance with the ASTM E-274, Skid Resistance of Paved Surfaces using a standard ribbed full scale tire at a speed of 40 mph (FN40R), and has a minimum FN40R value of 35.

PART 3 – EXECUTION

3.0.1. INSTALLATION OF ROADWAY MATERIALS

A. Subgrade: The work shall consist of bringing the bottom of the excavations and the top of the embankments of the roadways between the outer limits of the roadway to a surface conforming to the lines, grades, and cross sections shown on the plans, of uniform required density, ready to receive the base or paving course. The final elevation of the subgrade shall be within 0.1 foot of the required elevation.

1. All submerged stumps, roots, and other unsuitable matter encountered in the preparation of the subgrade shall be removed and replaced with a suitable material.

2. The material in the top 12” of subgrade shall have a minimum CBR of 25 when compacted to 95% of maximum density as determined by AASHTO Specification T 180-74. In areas such a condition does not exist, the top 12” of subgrade shall be stabilized as described below:

3. Stabilizing Material: Where stabilized subgrade and shoulders are required, the subgrade and shoulder material shall have a minimum California Bearing Ratio Material Value not less than 25. If the in place subgrade or shoulder material has a CBR value less than 25, a suitable stabilizing material shall be added. Such stabilizing material shall be crushed lime rock, coarse lime rock screenings, or any other stabilizing material approved by the Engineer.

4. Suitable stabilizing materials obtained from an existing base or pavement which is to be replaced or abandoned may be used providing that such material contain no fragments larger than 3 ½ inches in diameter.

5. The entire subgrade, including 2 feet beyond the edge of the proposed pavement, shall be thoroughly plowed, scarified, and mixed to a depth of not less than 6 inches below grade. All pot holes and other irregularities shall be filled with suitable material or trimmed down as the case may be, prior to compacting. If the area is cut to grade in natural lime rock, the top 6 inches shall be thoroughly plowed, scarified, and mixed. This plowed, scarified, and mixed layer shall be compacted to not less than 95 percent of the maximum density as determined by AASHTO Specifications T 180-74 prior to the placement of the base course.

6. After the subgrade has been prepared as specified above, the Contractor shall maintain it free from ruts, depressions, and damage resulting from the hauling and handling of any material, equipment, tools, etc. Ditches or drains shall be constructed and maintained along the completed subgrade section. Just before the base course is laid, the subgrade shall be tested as to, elevation and density.

B. Transporting Lime rock: The lime rock shall be transported to the point where it is to be used, over rock previously placed if practicable, and dumped on the end of the preceding spread. No hauling over the subgrade or dumping on the subgrade shall be done

C. Spreading Lime rock:

1. When using new material, the lime rock shall be spread uniformly, and all segregated areas of fine or coarse rock shall be removed and replaced with well-grade rock.

2. When the specified compacted thickness of the base is greater than 6-inches, the base shall be constructed in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished base, or enough additional to bear the weight of the construction equipment without disturbing the subgrade.

3. When using the existing base material, the Contractor shall expose the existing base material to the final base grade shown on the drawings. The Contractor shall then proceed with scarifying the top 6 inches of the base and reworking and compacting the material to achieve the required cross-section.

4. Minimum longitudinal slope shall be 0.3% for all roadways. For roadways with gutters, the longitudinal slope may be reduced upon approval by the Public Works Department.

D. Compacting and Finishing Base:

1. General:

   a. For single course base, after spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compacting.

   b. For multi lift base course, the first course shall be four (4) inches thick compacted cleaned of foreign material, bladed and brought to a surface cross section approximately parallel to that of the finished base. Prior to the spreading of any material for the upper course, the density test for the lower course shall be made and the Engineer shall have determined that the required compacting has been obtained. After the spreading of material for the second course is completed, its surface shall be finished and shaped so as to produce the required grade and cross section after compacting and free of scab and laminations.

2. Moisture Content: When the material does not have the proper moisture content to insure the required density, wetting or drying will be required. If the material is deficient in moisture, water shall be added and uniformly mixed in by discing the base course to its full depth. If the material contains an excess of moisture, such excess shall be reduced or removed until the required moisture content is attained before being compacted. Wetting or drying operations shall involve manipulation of the entire width and depth of the base as a unit.

3. Density Requirements: As soon as proper conditions of moisture are attained, the material shall be compacted to a density of not less than 98 percent of the maximum density as determined by AASHTO Designation T-180 as described below:

   a. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determinations on the finished base.

b. At least three density determinations shall be made at the completion of each course, also the density determinations shall be made at new/replaced every utility crossings and also at every 7,000 square feet of roadways or at more frequent intervals if deemed necessary by the Engineer.

4. Correction of Defects:

a. If at any time the subgrade material should become mixed with the base course material, the Contractor shall dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

b. If cracks or checks appear in the base, either before or after priming, which in the opinion of the Engineer would impair the structural efficiency of the base course, the Contractor shall remove such cracks or check by re-scarifying, reshaping, adding base material where necessary and recompacting.

E. Testing Surface: The finished surface of the base course shall be checked with a templet cut to required crown and cross section and with a 10-foot straightedge laid parallel to the centerline of the road. All irregularities greater than 1/4-inch shall be corrected by scarifying and removing or adding lime rock as may be required, after which the entire area shall be recompacted as specified herein before.

F. Thickness Determinations:

1. The thickness of the compacted lime rock base shall be measured at intervals of not more than 200-feet. Measurements shall be taken at various points on the cross sections prior to the application of the prime coat.

2. The measurements shall be taken in holes through the base of not less than 3-inches in diameter. Where the compacted base is deficient by more than 1/2-inch from the thickness called for on the drawings, the Contractor shall correct such areas by scarifying and adding lime rock. The base shall be scarified and rock added for a distance of 100-feet in each direction from the edge of the deficient area. The affected areas shall then be brought to the required state of compaction and to the required thickness and cross section.

G. Priming and Maintaining:

1. The prime coat shall be applied only when the base meets the specified density requirements and the moisture content in the top half of the base does not exceed 90 percent of the optimum moisture content of the base material. At the time of priming, the base shall be firm and unyielding.

2. The Contractor will be responsible for assuring that the true crown and grade are maintained with no rutting or other distortion and that the base meets all the requirements at the time the surface course is applied.

3.0.2. INSTALLATION OF CONCRETE

A. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little rehandling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

B. Steel reinforcement is called for on the drawings shall be placed at mid slab depth and the fabric shall be maintained at this location during the placing and finishing operations.

C. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

D. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

E. Striking off, Consolidating and Finishing Concrete:

1. Immediately after the placing, the concrete shall be struck off, consolidated and finished, to produce a finished pavement conforming to the cross section, width and surface finish required by the drawings and specifications. The sequence of operations shall be as follows: strike-off; vibratory consolidation; screeding; floating; removal of laitance; straight edging; and final surface finish. Strike-off, consolidation and finishing shall be accomplished in a manner such as to avoid damage to, or misalignment of, joint assemblies, dowels and other embedded items.

F. Straight edging and Surface Correction:

1. After floating has been completed and the excess water removed, but while the concrete is still in a plastic state, the surface of the concrete shall be tested for trueness with an accurate 10-foot straightedge. The straightedge shall be furnished by the Contractor. The straightedge shall be held in successive positions parallel to the road center line, in contact with the surface, and the whole area tested from one side of the slab to the other as necessary. The advance along the road shall be in successive stages of not more than one-half the length of the straightedge. Any depressions shall be immediately filled with freshly mixed concrete and struck-off, consolidated and refinished. High areas shall be cut down

and refinished. Straightedge testing and surface correction shall continue until the entire surface appears to conform to the required grade and cross section.

2. As soon as the concrete has hardened sufficiently to be walked on, straight edging shall again be done. All surface irregularities exceeding ¼-inch in a 10-foot shall be corrected by grinding as directed by the Engineer.

G. Final Finish: As soon as the water sheen has disappeared from the surface of the pavement and just before the concrete becomes non-plastic, a light broom finish shall be given to the surface.

H. Edging:

1. After the final finish has been applied, but before the concrete has become non-plastic, the edge of the pavement along each side of the strip being placed, on each side of transverse and longitudinal contraction joints and construction joints and along structure extending into the pavement, shall be carefully rounded to a ¼-inch radius except as otherwise indicated. A well-defined and continuous radius shall be produced and a smooth, dense mortar finish obtained. All concrete shall be completely removed from the top of the joint filler.

2. All joints shall be checked with a straightedge before the concrete has become non-plastic and, if one side of the joint is higher than the other or the entire joints is higher or lower than the adjacent slabs, corrections shall be made as necessary.

I. Joints:

1. Transverse Construction Joints: Transverse construction joints shall be constructed at the end of all pours and at other locations where the paving operations are stopped for as long as 30 minutes. Construction joints, however, shall not be placed within ten feet of any other transverse joint or of either end of a section of pavement. If sufficient concrete has not been placed to form a slab at least ten feet long, the excess concrete, back to the last preceding joint, shall be removed. The joints shall be formed by placing a wood or metal bulkhead accurately and securely in place, in a plane perpendicular to the profile and center line of the pavement.

2. Transverse & Longitudinal Contraction Joints: Construction joints shall be constructed at the interval indicated in the plans and shall consist of planes of weakness created by an edging tool. The cut in the fresh concrete shall be perpendicular to the surface of the pavement, shall extend to a depth of 1/3 of its thickness (1 ½" for 4" pavement) and shall have tooled edges as described above.

3. Expansion Joints: ½" Expansion Joints shall be formed by placing performed joint filler around all structures and foundations where pavement abuts curbs and gutters and at intervals not to exceed 100'.

4. Cleaning and Sealing Joints: Joints which are to be sealed, shall be filled with joint sealing material before the pavement is opened to traffic and as soon after completion of the curing period as is feasible. Just prior to sealing, each joint shall be thoroughly cleaned of all foreign material (including any membrane curing compound) and the joint faces shall be clean and surface-dry when the sealer is applied.

    a. The sealing material shall be applied to each joint to conform to the details shown on the drawings and in accordance with the manufacture's recommendation. The pouring shall be done in such manner that the material will not be spilled on the exposed surfaces of the concrete. Any excess material on the surface of the concrete pavement shall be removed immediately and the pavement surface cleaned.

    b. All cracks occurring in the pavement prior to its acceptance shall be cleaned out and sealed as specified above, except that the cracks and fractures shall be completely filled with joints sealer and any excess filler material cut down level with the pavement surface.

3.0.3. INSTALLATION OF CONCRETE PAVERS

A. Install paver blocks as manufactured by licensee of Paver Systems, Inc., in accordance with the Drawings, manufacturer's recommendations, and Standard Details. Paver block construction shall conform to the requirements of Interlocking Concrete Pavers Institute (ICPI).

B. Where necessary to cut blocks, cutting shall be done so as leave tight joint along all adjacent edges and surfaces. Smoothly split or sawn blocks only will be accepted.

C. After final vibrating/compaction there shall be no more than ¼ inch deviation from proposed grades.

D. Installation of concrete pavers in non-roadway areas shall be in accordance with the following.

D. Replacement of all underground utilities that are in conflict with paver installation.

E. The finished subbase shall be approved before placement of limerock base.

F. The limerock base course shall be compacted to 98% of maximum dry density as per AASHTO T-180.

G. The finished limerock base course shall be approved by the City or designee prior to placement of the sand leveling course.

H. The uncompacted sand leveling base shall be screened over the compacted limerock base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

I. The paver blocks shall be laid in the pattern approved by the City of Opa-Locka Public Works Department in accordance with the Standard Details.

J. Construct concrete header curb in accordance with the Standard Details.

E. Installation of concrete pavers in on roadways shall be in accordance with the following.

K. Replacement of all underground utilities that are in conflict with paver installation.

L. The finished subbase shall be approved before placement of the concrete slab.

M. The concrete pavers on the roadway shall be installed over a 6-inch-thick concrete base reinforced with galvanized steel wire mesh 6X6-W1.4xW1.4 with 1½ inches bedding between the concrete base and the concrete pavers.

N. The uncompacted sand leveling base shall be screened over the concrete base to an uncompacted thickness of 1½ inches. The bedding course shall be treated with soil sterilizers to prohibit growth of grass and weeds.

O. Construct concrete header curb in accordance with the Standard Details..

3.0.4. INSTALLATION OF TEXTURED PAVEMENT

A. Applying a patterned and/or textured treatment to asphalt or concrete, in accordance with manufacturer's recommendations. Applications include the following:

1. Imprinting patterns into existing or new pavement and covering with a surface coating(s) of paint or thermoplastic.

2. Imprinting patterns into existing or new pavement and inlaying the imprint with performed thermoplastic material.

3. Colored, preprinted, preformed texturized thermoplastic material that is applied over existing pavement.

4. Colored thermoplastic material that can be imprinted and texturized during or after application to existing pavement.

B. Patterns are defined as visible surface markings. Imprinted textures are defined as palpable surface markings.

C. Use the location, pattern/texture type (brick, stone, etc.) and coating color as specified in the Plans. Joint openings shall not exceed ½ inch in width.

D. Apply a patterned and/or textured treatment to asphalt or concrete in accordance with manufacturer's recommendations.

E. For application requiring removal and replacement of existing pavement, meet the requirements of Section 350 for cement concrete pavement; the requirements of Section 334 for Superpave asphalt or Section 337 for FC 9.5 and FC 12.5 asphalt.

F. Protect treated surfaces from traffic and environmental effect until the area is completely coated / imprinted and any coating have dried or cured according to the manufacturer's instructions. Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation. For asphalt roadways, apply patterned/textured pavement a minimum of 14 days after placement of the adjacent pavement. Upon completion of the installation, the Engineer will check the area at random location for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint width and depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost to the City. Supply the specified pattern and color sample for the Engineer's use to visually determine that the material matches the color specified in the plans. For any continuous or abutting areas, i.e. all treated areas of an intersection, color material must be from the same lot/batch. Provide certification that the textured pavement was installed in accordance with the manufacturer's requirements.

G. Textured pavement on crosswalks and travel lanes are to be tested for skid resistance in accordance with ASTM E303.

3.0.5. INSTALLATION OF SIDEWALK

A. Sidewalks at intersections and driveways shall be six (6) inches thick. Driveways shall include a 4-foot section at 2% maximum cross slope as per Standard Details and FDOT Index 522-03.

B. Sidewalks not at intersections or driveways shall be four (4) inches thick.

C. The concrete for sidewalk shall be 3,000 psi, with Miami-Dade County's sidewalk color standard match existing.

D. The concrete shall be reinforced with 6X6-W1.4xW1.4 welded steel wire mesh.

E. Wherever possible, sidewalks shall be designed with a minimum effective width of 6 feet on residential streets and 8 feet on collectors and arterials. Effective sidewalk widths shall be determined in accordance with the Miami Dade County Standard Details, firstly, and FDOT if not specified.

F. All wayfinding signage shall be installed in the back of the sidewalk wherever permitted by sight visibility, otherwise 4 feet minimum clear pedestrian path around sign shall be provided.

G. Repair of Concrete Sidewalk Surface Defects:

P. Remove and replace all concrete surfaces that contain surface defects, which includes, but not limited to cracking, cracks which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets and other objectionable and rough conditions and other objectionable conditions deemed unacceptable to the Engineer immediately after form removal. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness.

Q. Concrete rejected for any reason is to be removed and replaced, including labor, forms and reinforcing, to meet specifications at no additional cost to the City. Compounds for adhesion or as patching ingredients may be used, if approved by the City or designee. All repair of surface defects to be made require the approval of the City or designee, as to the method and procedure. Approval of the completed work must be obtained from the City or designee.

R. Remove existing sidewalk, or curb and gutter to either the nearest joint beyond or to where no remaining section is less than five (5) feet long.

3.0.6. INSTALLATION OF CURB RAMPS

A. It is the policy of the City of Opa-Locka Public Works Department to install truncated dome detectable warnings on the curb ramps, in compliance with the ADA Standards and PROWAG requirements for detectable warnings on walking surfaces and with FDOT standards. Curb ramps shall be directional and aligned with the crosswalk. Refer to the City of Opa-Locka Street Design Guidelines.

B. The installation of truncated domes on curb ramp shall be in compliance with the FDOT Index 522-002 and FDOT Specifications Section 527 and associated QPL. This Specification excludes stamped concrete detectable warnings due to poor performance.

C. The detectable warnings are required to have a dark-on-light or light-on-dark contrast with the surrounding concrete. Use Miami-Dade County' color standard on the detectable warning portion of the curb ramp. The color of the detectable warnings shall be integral with the device material.

D. Provide certification from an independent testing laboratory that the applied detectable warning device meets the above minimum requirements. Submit this certification for review and approval by the City or designee at least 10 days before the planned installation of any applied detectable warning device.

E. At least ten (10) days before the first installation of any applied detectable warning device, submit manufacture's installation recommendations and instructions for review and approval by the City or designee.

F. Special Considerations: 2 curb ramps per corner should always be used unless technically infeasible. US Access Board Public Rights-of-Way Access Advisory Committee strongly discourages single installations where possible because single ramps can:

1. Misdirect blind pedestrians who use the slope of curb ramps as a cue.

2. Increase crossing times for persons who use wheeled mobility aids and can place users into oncoming traffic at small radius corners where it is difficult to provide landing space at the bottom that is wholly within marked crossings.

3. Drivers may not be as alert to persons crossing at the apex of a corner.

G. If a single diagonal curb ramp is installed because of technical infeasibility, a 48 inches clear space wholly contained within the crosswalk must be provided at the bottom of the curb ramp to allow wheelchair users enough room to maneuver off of the ramp and into the crosswalk

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section includes minimum construction requirements for standard sewer manholes and precast concrete wet wells. It also includes precast concrete manhole sections with bell and spigot joints with masonry transition to covering, anchorage, coating/lining and accessories.

1.0.2. REFERENCES:

Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current editions of the following standards:

A. Florida Building Code

B. ACI 318, Building Code Requirements for Reinforced Concrete; ACI 350 Code Requirement for Environmental Engineer Construction Structures.

C. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

D. ASTM C62 - Specification for Building Brick (Solid masonry units made from Clay or shale).

E. ASTM C478 - Precast Reinforced Concrete Manhole Sections. F. ASTM A123 - Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

1.0.3. SUBMITTALS, INSPECTIONS

Submit the following information for approval. Fabrication shall not begin until submission has been approved.

A. Satisfactory evidence that plant and production methods meet the requirements of PCI MNL 116 for the Quality Control of the Precast Plant, Concrete Batch Plant and Testing Lab.

B. Submit Design mix to the Engineer prior to fabrication.

C. Complete shop drawings of both concrete structure and castings and showing all dimensions, reinforcement data, concrete strengths, etc. If of a non-standard design or if required by the Engineer of Record submit design calculations and data. All computation shall bear the seal of a Professional Engineer registered in the State of Florida.

D. Manhole and Wet Wells: The City shall have the option of witnessing the manhole wet well pour, reinforcing or formwork prior to fabrication. Provide the Engineer a schedule of the manhole fabrication at the preconstruction meeting.

E. Provide a rebar cutting lists for Pump Station Wet Wells. The rebar cut list is not required for standard manholes.

F. Cylinder breaks shall be done for each lot in accordance with FDOT Standards (max of 50 structures per LOT). The manufacturer shall maintain records of the cylinder breaks for each design mix. The 28-day concrete cylinder break reports shall be submitted to the Department once the 28-day before the project closeout.

1.0.4. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience. United Concrete Products, Landmark Precast, Concrete Products of the Palm Beaches, TJ Precast, US Concrete Products or Approved equal.

B. Quality Control Plan approved by the FDOT. The testing laboratory and batch plant shall be included in the FDOT Quality Control Plan.

C. The Precast Manufacturer shall have a stamp from the Quality Control Manager on each completed precast structure. The Quality Control Manager Stamp shall indicate that the manhole was constructed in accordance with ASTM C478 and Municipality Standards and the date that the structure was fabricated.

1.0.5. TRANSPORTATION

A. A. The precast concrete structure shall cure for a minimum of 72 hours. Transport of the precast structure to the jobsite is not allowed during the 72 hour curing period.

B. Comply with all applicable requirements of FDOT Section 450-16 Handling, Storage, Shipping and Erection.

PART 2 – PRODUCTS

2.0.1. MATERIALS

Precast manholes shall conform to the requirements of ASTM C478, latest edition, the Miami-Dade Water and Sewer Department Standard Details and the following:

A. Properties:

1. Reinforcement of Grade 60 bars. (Pump Station Wet Wells require rebars not wire mesh reinforcing).

2. Concrete 4,000 psi.

3. Water Cement Ratio: 0.40 to 0.34 Standard Manholes, 0.34 Pump Station Wet Wells.

4. Waterstops: Ribbed PVC Waterstop with centerbulb.

B. Cement shall be Type II with a **maximum aggregate size of #57**. Aggregate shall be **well graded** to produce a less porous and stronger concrete.

1. **Gravity Sewer System Manholes:** In sanitary sewage applications, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer terminal manhole within a 350 foot radius of the pump station, drop manholes, or where called for in the plans and/or specifications shall have a concrete protective coating or a antimicrobial admixture in the concrete mix.

   The antimicrobial admixture in the concrete mix is specified below:

   a. An antimicrobial agent, ConMICShield® , or approved equal, shall be used to render the concrete uninhabitable for bacteria growth.

   b. Contractor shall mix the liquid antimicrobial additive with the total water content of the concrete mix design in a proportion of 1 gallon per cubic yard. In the case of repairs to damaged concrete a proportion of 2 gallons per cubic yard shall be utilized.

   c. In some instances all of the concrete in the structure will receive the additive and in other instances only a portion of the concrete will receive the additive. Hence, the Contractor shall apply the additive only as directed in the specific instance.

   d. Precast Plant shall submit a letter of certification to the Department, stating that the correct amount and correct mixing procedure was followed for all antimicrobial concrete.

   e. ConMICShield® antimicrobial additive shall be as manufactured by ConMICShield® Technologies, Inc.; 541 Tenth Street NW #233, Atlanta, GA 30318; Phone: (877)543-2094

C. Minimum shell thickness of manholes shall be eight (8) inches.

D. Lifting holes through the structure will not be permitted

E. Three to five courses of brick shall be constructed atop the manhole corbel for height adjustment. Manhole adjustment grade rings may be utilized in lieu of clay bricks.

F. Precast Joints above Elevation +4.0. and Waterproofing

1. Standard Manhole: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Non-Shrink Grout both inside and outside of the joint. Wrap the outside Corbel and Exterior joint with a heat activated high shrink membrane.

2. Pump Station Wet Wells: Ram-Nek preformed plastic joint filler, Swellseal Hydrophillic Waterstop by Deneef, or approved equal. Apply Xypex Concentrate Cementitous Slurry or approved equal to the exterior and interior of the joint between precast members for waterproofing.

G. Holes for pipe connections, with a diameter equal to the outside dimension of the connecting pipe plus an additional 4-inches, shall be formed in the manhole walls. No cutting or chipping of the pre-formed holes, or cutting additional holes in the precast concrete walls will be permitted.

H. The bottom slab shall be cast monolithically with the lower section and the longitudinal reinforcement extending into the slab. The free air drop of the mix shall not exceed five feet.

I. No construction joints will be allowed below an elevation of four feet above mean sea level. Construction joints will be allowed above elevation+4.0, if adequate keyways and waterstops, approved by the Department (Ribbed PVC waterstop with centerbulb), are provided. The Department may approve an alternate joint method in cases of excessively deeper and heavy structures.

J. Built-in ladders or climbing rungs will not be permitted in any sanitary sewer manhole and only in other structures where shown on the Plans and called for in the specifications.

K. Openings shall be sealed with hydraulic cement non-shrink grout on both the exterior and interior of the structure.

L. Furnish manholes with accessories listed under "Manhole Accessories", below.

M. Lid and Frame: See Section 05550, "Castings".

N. Waterproofing:

1. Xypex Crystalline Waterproofing Admixture C-1000R with red dye or approved equal, applied at 3% of the volume of Portland cement in the manhole by volume.

2. Rheomac 300D Admixture as manufactured by BASF with red dye applied at 2% of the volume of Portland cement in the manhole by volume.

3. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

Note: The Engineer may accept certification from the precast fabricator in lieu of the red dye

2.0.2. CLAY BRICK UNITS AND GRADE RINGS

A. Clay brick shall be used in manhole construction. Clay brick shall conform to ASTM Standard C32, "Building Brick (Solid Masonry Units Made from Clay or Shale)". Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed in any wall. Under no circumstances shall brick with holes be utilized anywhere in construction of a manhole or other structure unless specifically called out on the Plans or in the Specifications.

B. Manhole adjustment grade rings may be utilized. Rings shall be made of 100% recycled HDPE and available in cone opening diameters of 24, 27, 30 and 36-inches. Slope adjustment shall be attained by rotation of "wedge" rings from 4.1% to 0% grade. Rings shall have been tested to withstand HS25 loading through at least 1,100,000 cycles without cracking or other damage. Rings shall not be damaged by hydrogen sulfide manhole conditions and shall be waterproof when assembled with approved butyl sealant. Ring shall weigh six pounds or less and be equipped with UV inhibitor. Rings shall have been in successful service in multiple locations within the US for at least ten years and shall be warranted for five years. Rings shall be LadTech, Inc. HDPE Recycled Adjusting Rings or approved equal.

C. Exterior Shrink Membrane not required on the HDPE Grade Rings.

2.0.3. MORTAR AND GROUT

As specified in Section 04060 and 03600, respectively. Only Type II cement shall be used.

2.0.4. REINFORCEMENT

As specified in drawings firstly, and on Miami-Dade County Standard Details.

2.0.5. SUMP

Where required, formed integrally with the base slab.

2.0.6. CONCRETE PROTECTIVE COATINGS **(Gravity Sewer Manholes)**

A. For manholes standard manholes that do not have a concrete protective coating or an antimicrobial additive (ConShield)in the mix, coat the interior of the manhole with Bitumastic 300M or approved equal, 16 mils minimum thickness. The manholes with a concrete protective coating or ConShield anti-bacterial admixture shall not have Bitumastic on the interior of the manhole.

Locations that require a Concrete Protective Coating or the Con Shield Admixture:

1. Manholes receiving the discharge of a force main.

2. Manholes within a 350 foot radius of a pump station wet well.

3. Drop manholes (if a drop connection is added to an existing manhole the existing manhole shall be rehabilitated with a concrete protective coating).

4. Any manhole location determined by the Engineer to have the probability of generating large quantities of sewer gas.

B. All concrete protective coating systems shall be pre-approved by the Water and Sewer Department based on testing done within the WASD system. Only products that have had a successful test application within the Miami-Dade Water and Sewer Department system and approved by WASD forces shall be allowed.

PREAPROVED PRODUCTS LIST- concrete protective coatings (standard manholes)

1. Available Manufacturers: The manhole coating products below have passed the WASD testing protocol and have been approved for use for rehabilitation of standard manholes. The manhole rehabilitation products shall be used as a complete system with no third party products used unless approved in writing by the coating manufacturer. A one year warranty on the complete coating system from the project completion is required.

    a. Uroflex as manufactured by Epoxytec International

    b. PPC as Manufactured by Polymorphic Polymers Corporation

    c. SP15 Spray Mortar, Sewer Guard HBS 100 Epoxy Liner by BASF

    d. Permaform MS-10,000 Fortified with ConShield or Cor-Guard Epoxy

    e. SprayRoq, Spray Wall and SprayShield GT Coating

    f. GEOKRETE System as manufactured by Quadex

    g. Mainstay DS-5 High Build Epoxy, Mainstay ML-72 Restoration Mortar

    h. GML Coating System: Green Monster Epoxy, GML-30 and GML-60 Epoxy Cement

    i. Raven Lining System: Raven 405 Epoxy, Raven 755 Epoxy Mortar

2. The manhole chimney shall utilize a flexible concrete protective coating. The acceptable flexible interior coatings for the manhole Chimeny are Epoxytec Uroseal, Uroflex or Geokrete.

C. Due to the probability of sewer gas generation, all manholes receiving the discharge of a force main, connecting to a major sewer line or interceptor sewer, drop manholes, or within a 350-foot radius of the terminal manhole immediately upstream of the pump station shall be either constructed of concrete containing Con^{MIC}Shield® antimicrobial additive or lined on all interior concrete surfaces with a pre-approved concrete protective coating or approved equal. Concrete protective coating system shall fully protect openings, such as for pipes, to insure that corrosive attack cannot take place at these locations. Protective system design for these areas will be checked as shop drawings. Note that boot systems are not accepted by the Department.

Since the proprietary grouts used to close the annular area between the manhole wall and pipe entering or leaving the manhole are not compatible to the addition of Con^{MIC}Shield® these areas require liner or coating (as acceptable to the Engineer) protection even in manholes constructed of concrete containing this material.

D. All manhole exterior surfaces, from finished grade to base, shall be coated with Carboline Bitumastic 300M, 2 coats 16 mils minimum thickness or have Xypex/BASF Crystalline Waterproofing Admixture, applied at 2 to 3% of the volume of portland cement in the manhole by volume. The Crystalline Waterproofing Admixture may be used in lieu of painting the exterior of the structure with Bitumastic Coal-Tar Epoxy.

E. If Con^{MIC}Shield® anti-microbial agent is used, interior coating and liners can be eliminated except as specified above. 2.07 CONCRETE ADDITIVE AND PROTECTIVE COATINGS (Pump Station Wet Wells).

2.0.7. MANHOLE ACCESSORIES:

All new sanitary sewer manholes shall be furnished with the following items. Where existing manholes will be modified or are scheduled to be refurbished, rehabilitation shall also include the following items unless otherwise approved by the Department.

A. Provide concrete protective coating system for manholes installed in locations identified to have high levels of sewer gas.

B. Provide high density polyethylene manhole infiltration inserts in accordance with Section 02625, unless the Department requires the installation of stainless steel insert.

C. Exterior Shrink Membrane on Corbel and Exterior Joint; On all manholes (excluding the HDPE grade rings)install a heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section. Membrane shall be Wrapid Seal, by Canusa Corrosion Protection and Sealing, or approved equal with the following properties:

PRODUCT COMPONENT	PROPERTY	TEST STANDARD	UNIT	RESULTS
ADHESIVE	Softening Point	ASTM E28	Deg. C (Deg. F)	100 (212)

	Lap Shear Strength	DIN 30 672	N/cm2 (psi)	8 (12)
BACKING	Tensile Strength	ASTM D638	MPa (psi)	20 (2900)
	Elongation	ASTM D638	%	600
	Hardness	ASTM D2240	Shore D	46
	Abrasion Resistance	ASTM D1044	mg	45
SLEEVE	Peel Strength	ASTM D1000	N/cm2 (psi)	15 (9)
	Water Absortion	ASTM D570	%	0.05
	Low Temp. Flexibility	ASTM D2671D	Deg. C (Deg. F)	-40 (-40)

PART 3 – EXECUTION

3.0.1. EXCAVATION

A. Refer to Section 02314, "Excavation, Backfill and Fill for Structures" for specific procedures, requirements and testing methods appurtenant to the work under this Section.

B. Excavation shall extend to a level 12-inches below the level of the outside bottom of the base slab. If necessary, provide sheeting and shoring for the excavation.

C. Backfill resulting excavation with drainfield limerock or specified bedding material to a level to receive the structure at the proper elevation.

3.0.2. GENERAL INSTALLATION

A. The precast base shall be set level, with the walls plumb on the graded crushed rock bedding.

B. B. If any surfaces of structures are exposed to view and to a depth of 6 inches below grade, the Contractor shall fill all depressions and all air holes with mortar, dampen surfaces, and apply an approved bonding agent then spread slurry, consisting of one part cement and one and one-half parts sand, by damp loose volume, on the surface with clean burlap pads and sponge rubber floats. The Contractor shall remove any surplus by scraping and then rubbing with clean burlap. Finish surface shall be suitable to receive paint.

3.0.3. INSTALLATION OF MANHOLES

A. Place base slab and manhole sections plumb and level. Coat exterior of precast structure with Bitumastic 300M or approved equal. Install heat activated, high shrink membrane, on the manhole's exterior, at each section joint and from the cast iron frame to the corbel section.

B. During all backfilling operations, the backfill level shall be kept even on all sides of the structure. Exercise every precaution to prevent damage to, or unplanned loading of, the structures and its appurtenances.

C. Lay clay brick in running bond. A minimum of three and a maximum of five courses shall be constructed atop each manhole corbel. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other work. Stucco inside and out with 3/4-inch of mortar.

D. Set cover frames and covers level without tipping, to correct elevations.

E. Exterior surfaces of all structures shall be painted prior to the installation as specified elsewhere herein.

F. Openings shall be sealed with non-shrink grout. No expanding grout shall be allowed.

G. After satisfactory installation and testing, all interior concrete surfaces of the new manhole shall be seal coated in accordance with Section 2.06-A.

H. The invert channels of the manhole shall be formed of brick or brick rubble thoroughly bedded and covered with sand-cement grout, accurately shaped to a semi-circular bottom conforming to the lower half of the connecting sewer pipe. Steep slopes outside the invert channels shall be avoided. Changes in size and grade shall be made gradually and evenly. Changes in the direction of the sewer or entering branch shall be a smooth curve with radius as long as practicable.

I. It shall be the Contractor's responsibility to assure that the frames and covers are set to match proposed finish paving grades at the manhole locations.

J. Gravity sewers shall connect to the manholes in accordance with Standard Details SS 7.0 and Section UC-250 "Gravity Sewer Systems".

3.0.4. ALTERNATE INSTALLATION

Installation methods given below in this Section shall only apply if permission is granted by the Engineer of Record to use the "Alternate Method of Construction" as specified elsewhere herein. All provisions of that Section shall be applied to the installation of the structures with the specific modifications as follows:

A. Excavation

Excavation shall be carried to a depth of two feet below the bottom of the base slab.

B. Special Bedding

1. Bedding shall be crushed stone or gravel meeting the requirements of ASTM Standard C33 "Concrete Aggregates", latest edition, gradation 67.

2. The bedding shall be placed in the excavation from cut bottom to the level of the bottom of the slab. Thereafter it shall be thoroughly rammed and tamped by use of a crane and weight or other means suitable to the Engineer of Record to provide a stable base for the structure. Tamping and, if necessary, additional filling shall be carried on until the Engineer of Record is satisfied that a suitably stable base has been created for the structure.

C. Backfill

1. After the structure is installed, special bedding material as specified immediately above shall be carefully hand or machine tamped around the structure up to a level of no more than eighteen inches above the water level. Thereafter the procedures and materials specified for backfill and compaction, shall be used to complete the installation.

2. During all backfilling operations the backfill level shall be kept even on all sides of the structure and the Contractor shall exercise every precaution to prevent damage to, or unplanned loading of, the structure or its appurtenances.

END OF SECTION

02620 CORRUGATED HDPE DRAINAGE PIPE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, joints and accessories within the limits of work, as shown on the Plans and specified herein. This section also includes the furnishing and construction of such joints and such connection to existing pipes, catch basins, inlets, manholes, among other structures, as required to complete the work as indicated on the Plans.

B. The Contractor shall perform the final cleanup and restore all site conditions to original or better conditions.

1.0.2. RELATED SECTION

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

1.0.3. QUALITY CONTROL

A. All material and installation shall be in accordance with the City‘s Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City’s designated representative in the field shall be followed by the Contractor.

C. The tubing or pipe shall not be left exposed to sunlight for periods exceeding the manufacturer’s recommendation.

D. For storm drain side drain, french drain and cross drain corrugated polyethylene pipe shall meet the requirements of AASHTO M 294 and 948-2.3.

E. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

F. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

G. Obtain pipe from a production facility that is listed on the FDOT Production Facility Listing. Producers seeking inclusion shall meet the requirements of Section 105 of FDOT Standards.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Class I (50-year design service life) corrugated HDPE pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M 294(V) with plant certification from the NTPEP. Corrugations shall be annular. Pipe resin shall conform to ASTM D3350 with a minimum cell classification 435400C and between 2% to 4% carbon black. Post-consumer and post-industrial recycled resins are not allowed. Mitered end sections are not to be constructed of polyethylene.

B. Class II HDPE pipe shall meet the requirements in Table 948-1 in addition to those in 948-2.3. Perforations will not be allowed. Manufacturers may only use ground Class II HDPE pipe for reworked plastic.

Table 948-1
Stress Crack Resistance of Pipes

Pipe Location	Test Method	Test Conditions	Requirement
Pipe Liner	FM 5-572, Procedure A	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time of the pipe liner shall be ≥18.0 hours, no single value shall be less than 13.0 hours.
Pipe Corrugation(1) (molded plaque)	ASTM F2136	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time shall be ≥24.0 hours, no single value shall be less than 17.0 hours.

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Junction	FM 5-572, Procedure B and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Longitudinal Profiles(6)	FM 5-572, Procedure C, and FM 5-573	Full Test(2)(3) Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F [3] 100 years (95% lower confidence) using 15 failure time values(4) The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test(5): Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Liner and/or Crown(7)	OIT Test (ASTM D3895)	2 replicates (to determine initial OIT value) on the as manufactured (not incubated) pipe.	25.0 minutes, minimum

Table 948-1 Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Liner and/or Crown(7)	Incubation test FM 5-574 and OIT test (ASTM D3895)	Three samples for incubation of 265 days at 176°F(8) and applied stress of 250 psi. One OIT test per each sample	Average of 3.0 minutes(9) (no values shall be less than 2.0 minutes)
Liner and/or Crown(7)	MI test (ASTM D1238 at 190oC/2.16Kg)	2 replicates on the as manufactured (not incubated) pipe	< 0.4 g/10 minutes
Liner and/or Crown(7)	Incubation test FM 5-574 and MI test (ASTM D1238 at 190°C/2.16Kg)	2 replicates on the three aged sampled after incubation of 265 days at 176°F(8) and applied stress of 250 psi	MI Retained Value(9)(10) shall be greater than 80% and less than 120%.

Note: FM = Florida Method of Test.

(1) Required only when the resin used in the corrugation is different than that of the liner

(2) A higher test temperature (194°F) may be used if supporting test data acceptable to the State Materials Engineer is submitted and approved in writing.

(3) Full test shall be performed on alternative pipe diameter of pipe based on wall profile design, raw material cell classification, and manufacturing process. Full test must be performed on maximum and minimum pipe diameters within a manufacturing process

(4) Computer program to predict the 100 year SCR with 95% lower confidence can be obtained from FDOT.

(5) Single test for the junction and longitudinal profile may be used on alternating pipe sizes within a manufacturing process. Single point tests may not be used on maximum and minimum pipe sizes within a manufacturing process except by approval of the Engineer. Single point tests may be used for quality assurance testing purposes.

(6) Longitudinal profiles include vent holes and molded lines.

(7) OIT and MI tests on the crown are required when resin used in the corrugation is different than that of the liner.

(8) The incubation temperature and duration can also be 196 days at 185°F.

(9) The tests for incubated and "as-manufactured" pipe samples shall be performed by the same lab, same operator, the same testing device, and in the same day.

(10) The MI retained value is determined using the average MI value of incubated sample divided by the average MI value of as manufactured pipe sample.

PART 3 – EXECUTION

3.0.1. EXCAVATING TRENCH AND BACKFILLING

A. Excavate the trench in accordance with Section 02314 "Excavation, Backfill and Fill for Structural Facility and Utility Systems" unless specific trench excavation procedures are described in the Plans.

B. Carefully excavate the trench to such depths as required to permit the bedding material and the pipe to be placed in accordance with the details shown in the Plans.

3.0.2. LAYING PIPE

A. No pipe may be laid when water is above the spring line. The spring like being defined as the horizontal center line of pipe. The Contractor shall be responsible for all dewatering of trenches as required by the Engineer.

B. Each piece section of pipe shall be cleaned and inspected just before being lowered into the trench. Any section that has been damaged in handling, or is found to be defective to a degree which will materially affect the function and service of the pipe, shall be rejected for installation. Pipes having defects that have not caused their rejection are to be so laid that those defects will be in the upper half of the sewer. If any difficulty is found in fitting the pieces together, this fitting is to be done one the surface of the street before laying the pipe, and the tops plainly marked in the order in which they are to be laid. No pipe is to be trimmed or chipped to ft.

C. Each pipe shall be laid to the line and grade provided by the Engineer. All pipes shall be laid with bells or grooves uphill and tongue end fully entered into the hub. Each pipe is to be solidly and evenly bedded, and not simply wedged up before finishing each joint. Some suitable device is to be used to find that the inverts coincide. No length of pipe shall be laid until the two proceeding lengths have been thoroughly embedded in place, so as to prevent any movement or disturbance of the finish joint.

D. As the pipes are laid through the work, they must be thoroughly cleansed and protected from dirt and water, and no water will be allowed to flow in the trench in any case during construction. No walking on or working over the pipes after they are laid will be permitted, except as may be necessary to backfill and compact the soil to a depth of one-foot above the top of the pipe.

E. Whenever the pipe laying is discontinued, as at night, the unfinished end is to be securely protected from displacement by caving of the banks or from other injury, and a suitable stopper is to be inserted therein.

END OF SECTION

02630 OUTFALL HEADWALL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for precast concrete headwalls. The headwalls shall be constructed in accordance with FDOT specifications and Standard Details, and in conformity with the Plans.

1.0.2. PRECAST PRESTRESSED CONCRETE CONSTRUCTION

A. Fabricate, store, transport and erect precast/prestressed concrete members prestressed by the pretensioning method. Pretensioned precast prestressed concrete products are products prestressed by the pretensioning method. In this method, steel or fiber reinforced polymer (FRP) components are stressed and anchored; the concrete for the product is then cast and cured, and finally the stress in the steel or FRP components is released from the anchorages to the concrete through bond, after the concrete has attained its specified release strength.

B. A precast prestressed concrete plant, hereinafter called plant, is an independent operating facility capable of performing all the operations necessary to fabricate precast/prestressed concrete products.

1.0.3. QUALITY ASSURANCE

A. The Engineer will perform periodic inspections, sampling, and testing to ensure of the quality and acceptability of the materials, methods, techniques, procedures and processes being utilized in the fabrication of precast prestressed concrete products.

1.0.4. RELATED SECTIONS

Section 03400 - PRECAST PRESTRESSED CONCRETE

PART 2 – PRODUCTS

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

PART 3 – EXECUTION

Refer to section 03400 - PRECAST PRESTRESSED CONCRETE

END OF SECTION

02730 STORMWATER AREA DRAINS AND INLETS

PART 1 – GENERAL

1.0.5. SCOPE OF WORK

A. This section includes minimum construction requirements for precast catch basins or cast-in-place with type Class I concrete and reinforcing steel or brick masonry with the necessary metal frame and grate. The catch basins shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 350 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Brick Masonry: shall be either clay or shale brick meeting the requirements of ASTM C62 or concrete building brick meeting the requirements of ASTM C-55.

D. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

E. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). They shall be cast to the size and dimensions shown on Standard Detail SD-2.3 or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONTRUCTION

B. Catch basins shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-2.1.

C. Catch basins shall be located within the right-of-way as shown on Standard Detail SD2.4 or SD-2.5. The pavement around catch basins constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

B. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the catch basin.

C. Brick masonry in catch basins shall be build of brick and mortar of the specified quality. All brick shall be saturated with water before being laid. The brick shall be laid using the shovejoint method so as to bond them thoroughly into the mortar. Headers and stretchers shall be so arranged as to bond the mass thoroughly. A limited amount of halfbrick may be used not exceeding one-third (1/3) of the whole, if properly bonded with whole brick. Joints shall be finished properly as the work progresses and shall be not less than ¼-inch and not more than ½-inch in thickness. No spalls nor bats shall be used except for shaping around irregular openings or when unavoidable at corners. Only experienced bricklayers shall be employed on this work.

D. Brick catch basins shall have a plaster coat of mortar ½-inch in thickness on the inside and outside, mortar shall be as specified in sub-article 320.02 f.

E. When the catch basin is to be constructed of concrete, the forms shall be placed to the depth shown on the Plans or as directed by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 340.b. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

3.0.2. PRE-CAST CONSTRUCTION

A. The Contractor may, at his option, use precast catch basin constructed in accordance with Standard Detail SD-2.2.

3.0.3. PIPE PLACEMENT

A. Inlet and outlet pipe shall be of the same size and kind as the connecting pipe. They shall extend through the walls for a distance beyond the outside surface sufficient for the intended connections. The Concrete shall be placed around them neatly so as to prevent leakage along their outer surface. The inlet and outlet pipes shall extend three-inches inside the inner surface of the catch basin.

B. A ½-inch mesh galvanized screen with removable clamp as approved by the Engineer, shall be placed on the outlet pipe.

END OF SECTION

02721 STORMWATER CURBSIDE DRAINS AND INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes minimum construction requirements for swale inlets or curb inlets with type Class I concrete, reinforcing steel and the necessary frame, grate or cover. The inlets shall be constructed in accordance with the Miami-Dade County Public Works Manual – Section 355 and Standard Details, and in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: shall be Class I concrete with minimum strength 3,000 psi.

B. Reinforcing Steel: shall be either intermediate or hard grade and shall conform to the requirements of ASTM A-15 or ASTM A-16. All reinforcement bars larger than 5/4-inch diameter shall be deformed bars conforming to the requirements of ASTM A-305.

C. Mortar: shall be mixed to a ratio of one part by volume of Portland Cement and two parts by volume of sand. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe. Ten percent (10%) hydrated lime by volume may be added to the mortar.

D. Frame and Grate: the quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for the swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

   All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coal-tar pitch varnish.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION

A. Inlets shall be built at the points indicated on the Plans or as directed by the Engineer. They shall be constructed in accordance with the size dimension and notes shown on Standard Detail SD-3.1 or SD-3.2.

B. When inlets are to be cast in place, the forms shall be set to the depth shown on the Plans or as indicated by the Engineer. The placing and handling of reinforcing steel shall be as specified in Section 227. After the concrete has been poured, it shall be thoroughly tamped and spaded. After the concrete has hardened sufficiently, the forms shall be removed, and the concrete covered with suitable material to keep it moist for a period of three days or longer if necessary. It shall be protected, in a satisfactory manner, from the elements until thoroughly hardened. After the concrete has been cured as specified, the frame of the casting shall be set in a full mortar bed.

C. Swale inlets to be constructed in a driveway or swale shall be located as required for catch basins (Standard Details SD-2.4 or SD 2.5).

D. The pavement around inlets constructed in the swale shall conform to the following specifications:

1. Limerock Base: Section 51

2. Type I Asphaltic Concrete: Section 133

C. Swale areas adjacent to the paved area around catch basins shall be properly graded to lead stormwater into the inlets.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision or construction of stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Miami-Dade County Public Works Manual and/or Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed or constructed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. FRAME AND GRATE

Miami-Dade County Public Works Sections 350 & 55 states the following:

A. The quality of materials used in the manufacture of frame and grate shall be Class 30, grey iron castings which conforms to the requirements of ASTM A-48 (AASHTO specification M-105). The frame and grate for catch basins and/or swale inlet shall be cast to the size and dimensions shown on Standard Detail SD-2.3, and the frame and grate for the curb inlet shall be cast to the size and dimensions shown on Standard Detail SD-3.3, or an approved equal. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage, defects, cracks or other injurious defects. Castings shall be boldly filleted at angles and aries shall be sharp and perfect. They shall be smooth and well cleaned by blasting.

B. All castings are to be manufactured true to pattern and with satisfactory fit of component parts. The frame and grate shall be of non-rocking design of with machined ground surface so fitting parts will not rattle or rock under traffic. The weight of the frame and cover shall be within two-pound tolerance of those weights shown on the Standard Details. All castings shall be clean and neatly finished with a coating of coaltar pitch varnish.

2.0.2. GRATINGS, COVERS, AND FRAMES

FDOT Section 425 states the following:

A. Use gratings and frames fabricated from structural steel or cast iron as designated in the appropriate Standard Plans Index. When “Alt. G” grates are specified in the Plans, provide structural steel grates that are galvanized in accordance with the requirements of ASTM A-123 and hardware galvanized in accordance with the requirements of ASTM A-153.

B. Use rigid frames and covers either 24 inches or 36 inches or optional three-piece adjustable frames and covers as indicated in Standard Plans, Index 425-001.

C. For three-piece adjustable frames, the inner frame may include replaceable resilient seats to support the cover. In addition, the inner frame shall indicate it is adjustable, by clearly having the word “adjustable” imprinted into the exposed portion of the inner frame so “adjustable” is visible from the roadway after installation.

2.0.3. IRON CASTINGS

FDOT Section 962 states the following:

A. Gray Iron Castings

1. Provide gray iron castings that conform to the requirements of AASHTO M-105.

2. For frames, grates, rings, and covers for inlets, manholes, and other structures placed in areas of vehicular traffic, conform to the requirements of AASHTO M 306. Unless otherwise specified in the Contract Documents, provide gratings, manhole covers and frames to Class 35B and machinery parts to Class 30.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02730 STEEL GRATINGS AND FRAMES FOR STORMWATER DRAINAGE INLETS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes specifications for the provision of steel stormwater drainage inlet grates and frames. The specified miscellaneous components shall meet the requirements stated in the Florida Department of Transportation (FDOT) Standard Specifications, and shall be installed in conformity with the Plans.

PART 2 – PRODUCTS

2.0.1. STEEL CASINGS

A. Carbon Steel Castings

1. Provide carbon steel castings that conform to the requirements of ASTM A27. Unless otherwise specified in the Contract Documents, all castings are to be Grade 65-35 or Grade 70-36.

B. Corrosion Resistant Steel Castings

1. Provide corrosion resistant Iron-Chromium or Iron-Chromium-Nickel castings that conform to the requirements of ASTM A743. Unless otherwise specified in the Contract Documents, all castings are to be Grade CA 15M.

PART 3 – EXECUTION

(NOT USED)

END OF SECTION

02745 PAVEMENT REMOVAL AND REPLACEMENT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Work included under this Section covers the furnishing of all labor, equipment and material required for cutting, removing, protecting, constructing, replacing or stabilizing all existing roadways, driveways and pavements of the various types encountered, removed or damaged under this Contract.

B. In addition, all existing utility castings, including valves boxes, junction boxes, handholes, pull boxes, inlets and similar structures in the areas of trench restoration, pavement replacement and pavement overlay shall be adjusted by the Contractor to bring them flush with the surface of the finished work.

1.0.2. QUALITY CONTROL

A. The phrase “FDOT Specifications” shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The FDOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as through reproduced herein in their entirety.

1.0.3. DAMAGE BY CONTRACTOR

A. The Contractor shall be responsible for the protection from damage from his construction operations, all pavements, including all base courses and surface courses, within the work area.

B. Payment for pavement restoration will be made only where such base courses or surface courses are encountered within the limits defined in the pavement repair details shown on the Plans and/or in the City Standard Details at the rear of the Specifications.

C. Any base course or surface course beyond those limits, damaged as a result of the Contractor's operation, shall be restored in accordance with the applicable requirements of these specifications, to the satisfaction of the City, and to the satisfaction of the governing authority having jurisdiction over the work area.

D. Any damage to adjacent lanes of pavement will require the Contractor to resurface the entire lane width for a length, as approved by the City. When the damage amounts to 25 percent or more in any one block (approximately 600 feet), the Contractor shall resurface the entire width of the lane in which the damage occurred for the entire block.

E. The Contractor is hereby notified that wherever the line for repaving for trenches extends one foot into the edge of the existing paving, he shall repave to this edge only. Full lane paving will not be required. Damage to the pavement beyond this line by the

Contractor will require that he repave the full width.

F. In order to protect himself from being held liable for any existing damaged pavement, including detour routes, the Contractor is advised to notify in writing the authority having jurisdiction over the street where such defective pavement exists prior to proceeding with any work in the vicinity. A copy of all such notices shall be forwarded to the City.

G. No payment shall be made for pavement restoration which falls outside the above described limits and is required for thrust blocks and other appurtenant items. The cost for such work shall be included in the price bid for the applicable item.

H. It is brought to the Contractor's attention that wherever the line of the nominal repaving for trenches extend to within two (2) feet of the edge of the existing paving, he shall repave to this edge.

PART 2 – PRODUCTS

2.0.1. MATERIALS – GENERAL

A. Lime rock Base shall be as specified in Section 02526 "Concrete Pavement, Curb and Walkways".

B. Asphaltic Pavement, Prime Coat and Tack Coat shall be as specified Section 02750 "Asphaltic Concrete Pavement".

C. Sand cover material shall be clean and non-plastic, and shall be composed of hard durable grains, free from loam, silt rock particles and shall not contain any sticks, vegetation, grass, roots or organic matter. Local sand meeting such requirements may be used. Sand shall be subject to approval by the City.

D. 1:10 Mix: Sand-cement mix for backfill within state roads shall be a 1:10 mix of Type I or II Portland Cement and Sand that shall produce a slump of 4 to 6 inches.

2.0.2. BITUMINOUS PAVING MATERIAL

Asphalt cement for asphaltic concrete mixes shall be Viscosity Grade AC-20 or AC-30, homogeneous, free from water and shall meet the requirements of FDOT Specifications, Section 916-1. Unless otherwise specified, all test samples required shall be supplied by the Contractor. For friction courses, in addition to meeting the above requirements, the bituminous material shall contain 0.5% of a heat-stable, anti-stripping additive from an approved source.

A. Asphaltic Concrete - Type S-I Mix shall meet the requirements of FDOT Specifications for Type S-I Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications.

B. Asphaltic Concrete - Type I Mix shall meet the requirements of Miami-Dade County Public Works Department Specifications for Type I Asphaltic Concrete Surface Course, Section 133 of the Public Works Manual.

C. Asphaltic Concrete - Type III Mix for asphaltic concrete wearing surface overlay, both machine laid and standard (skin patch), shall meet the requirements of FDOT Specifications for Type III Asphaltic Concrete, Section 333-1 through Section 333-6.

D. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs. See subsection 3.07, below.

E. Asphaltic Concrete - Type FC-1, FC-2, FC-3 and FC-4 shall meet the requirements of D.O.T Specifications for Friction Courses, Sections 337-1 through Section 337-7.

F. Emulsified Asphalt for Slurry Seal Coat shall be of the slow-setting, mixing type and shall be homogeneous, meeting the requirements of the Asphalt Institute, Grade SS-1 or SS-1h.

G. Liquid Asphalt for Prime and Tack Coat: See Section 02741.

H. Liquid Asphalt for Sand and Asphalt Paving shall be asphalt cement, viscosity Grade AC-5 or emulsified asphalt, Grade RS-2 (anionic) conforming to the requirements of FDOT Specifications, Section 916-1 and 916-4, respectively.

I. Mineral Aggregate for Slurry Seal Coat shall consist of screened sand or limestone screenings or gray granite screenings or a mixture of sand and screenings plus not less than 3%, by weight, of Type I or Type II Portland cement.

PART 3 – EXECUTION

3.0.1. INSTALLATION – GENERAL

A. Permanent pavement repair shall be in accordance with the details shown in the Standard Details herein, with edges straight and parallel and patches rectangular in plan. Replace any paving, beyond the limits shown in the details and as called for in the specifications, as required. Where trenches are located out of the existing pavement and damage occurs to the pavement, that pavement shall also be replaced by the Contractor.

B. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced, in kind, to the satisfaction of the City of Opa-Locka Public Works Department.

C. All equipment necessary for construction shall be on the job site in first class working condition. Spilling or dropping of petroleum products is prohibited and all defective equipment shall be removed or replaced immediately. The Contractor shall be subject to all DERM (Department of Environmental Resources Management) regulations and clean up requirements.

D. The percentages of maximum density for subgrade and lime rock base specified herein are minimum. Greater percentages of maximum density shall be obtained, if so required, by the governing authority having jurisdiction over the work location.

E. Asphaltic concrete mixtures shall be obtained only from plants which comply with the requirements of FDOT Specifications, Section 320 as applicable, using materials specified herein, and producing the specified mixture. General construction requirements for all hot bituminous mixtures specified herein shall conform to FDOT Specifications, Section 330, as applicable.

I. Asphaltic concrete shall be laid only where the surface to be covered is intact, firm, cured and dry, and only when weather conditions are suitable. The temperature of the mixture at the time of spreading shall be within 25°F of the temperature set by the Engineer. No mixture shall be spread when the air temperature is less than 40°F nor when the spreading cannot be finished and compacted during daylight hours.

F. Any mixture caught in transit by a sudden rain may be laid at the Contractor's risk, if the base is in suitable condition. Under no circumstances shall asphaltic material be placed while rain is falling, or when there is water on the area to be paved.

G. Subgrade: Roadway subgrades shall be stabilized to the minimum depth shown on the drawings to a Lime rock Bearing Ratio of not less than 40. Stabilizing shall be Type B as defined in Section 160 of the FDOT Specifications. Stabilization may require the addition and thorough mixing in of crushed lime rock, course lime rock screenings, or any other stabilizing material acceptable to the City. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subgrade will have a LBR of not less than 40. Stabilizing material shall be mixed or blended in the subgrade material by plowing, scarifying, disking, harrowing, blading and mixing with rotary tillers until the mixed materials are of uniform bearing value throughout the width and depth of the layer being processed.

H. At least three density determinations shall be made on each day's final compaction operations on each course, and the density determinations shall be made at more frequent intervals if deemed necessary by the City.

I. Lime rock Base: The lime rock base shall be constructed in accordance with Sections 200 and 911 of the FDOT Specifications, to the thickness and width indicated on the drawings.

J. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 8-inches.

K. When the material does not have the proper moisture content to ensure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98 percent maximum density as determined in more than one course, the density shall be obtained in each lift of the base.

L. During final compacting operations, if blading of any areas is necessary to obtain the

true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

M. Unless otherwise directed by the Engineer of Record, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

N. If cracks or checks appear in the base, either before or after priming, which in the opinion of the City, would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by rescarifying, reshaping, adding base material where necessary and recompacting.

O. Mixing Base and Subgrade: If at any time the subgrade material shall become mixed with the base course material, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

P. Asphaltic Concrete: The spreading, compacting and jointing the wearing surface shall be in accordance with Sections 330 and 331 of the FDOT Specifications to the thickness indicated on the drawings.

3.0.2. TEMPORARY PAVING

A. Prior to commencing excavation, the asphalt surface shall be saw-cut within the limits of the allowable trench width. Temporary paving will be required along the entire route where the original paved surface is removed. Unless otherwise approved by the City, temporary paving shall be placed the same day the trench is backfilled. The trench shall be backfilled up to a level 1 inch below the existing pavement surface and a temporary, cold mixed sand/asphalt pavement shall be constructed up to the level of the existing pavement surface. The liquid asphalt shall be Grade RC-70, conforming to the requirements of FDOT Specifications, Section 916-2. The sand shall conform to the requirements of FDOT Specifications, Section 902.3 for fine aggregate.

B. The cold mix is to be installed one block at a time, not crossing any intersection, or a maximum of 1,200 feet shall be completed before the Contractor may move forward with his excavation work. Backfill, compaction and temporary paving is to keep pace with the pipe installation. Written permission must be obtained from the City permitting the work to allow greater lengths than 1,200 feet. Permitting agencies may reduce the allowable limits in their permit, or for other unforeseen right-of-way conditions.

C. Prior to completion of the work and within a maximum of 30 calendar days, the Contractor shall remove the 1 inch of cold mix and surplus backfill. The Contractor shall replace it with the specified compacted lime rock base course and asphaltic within the specified working limits. Municipal agencies permitting this work may accelerate the time for removal of the cold mix, at their discretion.

D. The temporary pavement shall be maintained by the Contractor in a condition satisfactory to the City until its removal. Removal shall include any surplus backfill material. Replacement of the temporary pavement with permanent pavement shall be made within 30 days. In replacing the temporary paving with permanent pavement, all work shall be completed in sections compatible with specified traffic maintenance procedures.

E. The Contractor may elect to install a suitable temporary hot mix asphaltic pavement, to be left in-place, in lieu of cold mix, when the hot mix asphalt is left in-place and installed over properly compacted lime rock base course. This temporary pavement shall be incorporated into the specified permanent pavement restoration as part of Type I paving restoration.

F. Sand seal on the lime rock base course will not be permitted in lieu of temporary paving.

G. Unless otherwise approved by the City, temporary paving, shall be placed within twenty-four hours following the completion of backfilling.

3.0.3. TYPE I PAVING REPAIR (LIMEROCK BASE - ASPHALTIC CONCRETE SURFACE)

A. Type I paving repairs shall be made with an 8-inch thick compacted lime rock base and a minimum 1-inch thick asphaltic concrete surface, as detailed in the Standard Details. On Public Works roads asphaltic concrete shall have a compacted thickness of 2-inch, placed in a minimum of two (2) compacted 1-inch lifts.

B. Limerock for pavement base shall be Miami limerock obtained from local sources where the overburden was removed from the pits prior to mining operations. The limerock shall comply with the requirements of FDOT Specifications, Section 911.

C. The backfill previously placed and compacted shall be excavated to the required depth below the existing road surface and the existing paving shall be cut back beyond all excavations, using an abrasive disc saw to trim the edges to straight and true lines, minimum width for the lime rock base shall be equal to the trench width plus 2 feet. Eight inches of lime rock base shall be placed in two layers, each layer compacted to not less than ninety-eight percent (98%) density in accordance with Section 200 of FDOT Specifications. During rolling, the base shall be wetted down, as necessary, to secure the greatest possible compaction. After rolling, the entire surface of the base shall be thoroughly scarified to a depth of not less than 3 inches and shaped to conform to and be parallel with the existing surface, then watered and rolled again. Rolling and watering shall continue until the entire depth of the base is bonded and compacted into an unyielding mass.

D. If at any time the subgrade material becomes mixed with the lime rock base course materials, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean rock which shall be watered and rolled until satisfactorily compacted.

E. After the lime rock base course has been properly prepared and is dry and ready to receive the wearing surface, a tack coat of emulsified asphalt, in accordance with

Section 02741, shall be applied at a rate of 0.10 gallon per square yard, immediately followed by the asphaltic concrete. The tack coat shall be applied to the entire lime rock base uniformly, and shall thoroughly coat all surfaced. Care shall be taken to tack coat and bond the edge of surrounding pavement.

F. The asphaltic concrete shall be plant mixed, using the best grade of local aggregates of approved size and gradation and mixed with an approved binder and conforming the either the State of Florida Department of Transportation Specifications, Type S-1 Asphaltic Concrete, Sections 330, 331 and 916 of FDOT Specifications, or Miami Dade County Public Works Type I, as ordered by the Engineer of Record.

G. Where the width of the repair permits, the asphaltic concrete plant mix material shall be placed by means of an approved mechanical spreader and finisher. The mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than eight tons. The compacted asphaltic concrete mixture shall not be, in any case, less than one inch in thickness. Rolling shall proceed as closely behind the spreader as possible and all material shall be completely compacted the same day it is placed. The minimum width of the wearing surface shall be the same as the base.

3.0.4. TYPE IV PAVING REPAIRS (CONCRETE SLAB – RIGID PAVEMENT)

A. Type IV repairs will be used when the restoration work falls within the limits of existing rigid pavement.

B. Paving repairs shall be similar to Type III paving repairs except that No. 4 reinforcing steel bars spaced 12 inches on centers both ways shall be substituted for the mesh reinforcement, and the slab shall be 8 inches thick instead of 6 inches, with the top of the concrete matching the elevation and finish of the existing pavement. The asphaltic concrete surface course is not required.

3.0.5. TYPE V PAVING REPAIRS (ASPHALTIC CONCRETE WEARING SURFACE OVERLAY)

A. Type V paving repairs shall be made where noted on the plans and/or as ordered by the Engineer or Record. Type V paving repairs shall consist of a machine-laid asphaltic concrete wearing surface overlay, which shall be a nominal one-inch thick asphaltic concrete, meeting the material requirements of Type I repairs, as specified hereinabove. As used herein, "overlay" shall mean Type V paving repairs. A special wearing surface may be substituted, if required.

B. In general, the overlay shall be applied in a full lane width or widths, after the permanent paving repairs over the trench have been made. Type V is usually in addition to required Type I repairs. Since the quantity of Type V repairs that may be required is usually unknown until pavement restoration work begins, Type V repairs may be established in the Proposal on a contingent basis.

C. All longitudinal and transverse asphalt replacement overlay wearing surfaces shall butt into adjacent existing asphalt wearing surfaces in full lane asphaltic pavement restoration. The finish elevation of the new full lane overlay shall meet existing elevations adjacent to the new work.

D. The existing asphaltic concrete surface shall be saw cut for its full depth or 1-inch minimum, and then stripped back for at least 2 feet into the area to be overlaid to a second cut which shall also be in clean straight lines. The second, or interior, cut edge shall be rolled with a tandem roller weighing not less than 8 tons before the overlay is applied. The stripped area shall be used to provide a smooth transition or "feather" area between the overlay and the existing pavement. Before placing the overlay, all cut edges and the surface of the stripped area shall be tack coated with emulsified asphalt as specified herein below.

E. If the Contractor requests in writing to "feather" the longitudinal edge, and if written permission is granted to "feather" the asphalt by the City a sanded mix of 70-30 type shall be used. "Feathering" shall begin 18 inches from the tapered edge.

F. Prior to installing a full lane width overlay over existing asphaltic pavement the trench and shoulders over the pipe shall be sawcut and filled with asphaltic concrete to the required depth, terminating flush with the existing adjacent asphalt in accordance with the municipality having jurisdiction over the work for Types I, II or M. Type V overlay will be installed as detailed above.

G. When a minor amount of asphalt surface will remain, generally with large pipe installations, after the pipe has been installed and the required longitudinal saw cutting of the asphaltic pavement completed, the Contractor may request permission to remove all the asphalt in the lane, by saw cutting the asphalt adjacent to the existing lane, then placing the Type V overlay flush with the adjacent asphalt. This would require that the Type I, II or M finish elevation be lowered 1 inch to allow for the Type V overlay.

H. Before the overlay is applied, existing surfaces shall be swept clean of all dirt and debris, using a power driven broom if warranted by the size of the location to be overlaid and/or as ordered by the City. Pavement edges shall be cleared of all encroaching vegetation, loose sand, rock and all other foreign matter. When the existing surface is thoroughly clean, a tack coat of Emulsified Asphalt Grade RS-2 (anionic) shall be applied at the rate of approximately 0.10 gallon per square yard, immediately followed by the asphaltic concrete overlay.

I. Machine-laid overlay shall be placed by means of an approved mechanical spreader and finisher, and the mixture shall be compacted to true grade and cross section by means of a tandem roller weighing not less than 8 tons.

J. The compacted overlay shall be thicker as required to produce a smooth uniform surface free of any irregularities but shall not be less than one inch in thickness. Existing depressed areas in the asphaltic pavement, which could collect water after a rainfall shall be corrected before placing the asphaltic overlay. Rolling shall proceed as close behind the spreading of the asphaltic overlay as possible, and all materials shall be completely compacted the same day it is placed.

3.0.6. SLURRY SEAL COAT

A. Slurry-seal repairs shall be made where ordered by the Engineer of Record or the City.

B. Before any material is laid, the existing surface shall be cleaned with brooms or power blowers. Vegetation which has overgrown the edges shall be removed. All cracks, potholes and depressions shall be brought up to grade with bituminous concrete skin patching.

C. A tack coat, if required, shall consist of emulsified asphalt SS-1h, diluted with 3 parts of water, sprayed and squeegeed or broomed at a rate of 0.1 to 0.2 gallons per square yard.

D. A minimum thickness of 1/8-inch to a maximum of 1/4-inch of slurry mix shall be spread by a drag distributor at a maximum rate of 180 feet per minute. Any ridges or surplus material shall be smoothed by hand squeegee. The pavement shall be kept damp with a fog spray just ahead of the machine.

E. A second coat shall not be applied to, nor traffic permitted to drive upon, the first application until it has thoroughly dried. (A dry condition is such that an automobile tire track does not show after driving on the surface).

3.0.7. ASPHALT COLD MILLING

A. Cold milling of the existing pavement for a 1-inch depth shall be done by using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final

B. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above.

C. The required width of 1-inch thick asphaltic concrete wearing surface of the specified wearing course shall be applied in accordance with the above specifications.

D. The Contractor shall perform asphalt cold milling where called for on the plans or as required for a complete installation, when approved or requested by the City. Cold milling shall be done using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the City and governing agency having jurisdiction at the location of the pavement milling operation. All charges for maintenance of traffic, transportation of personnel, equipment and other mobilization charges shall be considered as incidental to the cold milling operation.

E. Cold asphalt milling shall be provided to improve the rideability of the finished pavement, lower the finished grade adjacent to an existing curb prior to resurfacing or to completely remove existing pavement. The overall length of the milling machine (excluding the conveyor) shall be a minimum of 18 feet, and having a minimum cutting width of six feet. The milling operation shall be operated to effectively minimize the amount of dust being emitted from the machine. Prewetting of the pavement may be required. In areas where milling is to be performed around the City utility structures such as manholes, valve boxes etc., proper caution shall be taken as not to damage any of the structures. Saw-cutting of the concrete surrounding the structure and using

a pick or other means so as not to disturb the structure shall be employed to prevent any damage. Prior to opening an area which has been milled to traffic, the pavement shall be thoroughly swept with a power broom or other approved equipment to remove to the greatest extent practicable, the fine material which will dust under traffic. This operation shall be conducted in a manner so as to minimize the potential for creating a traffic hazard and to minimize air pollution.

F. The milling operation shall be continuous so as to complete each site without any delays. All milling operations shall be coordinated by the City Inspector.

G. Traffic maintenance charges shall include the installation and maintenance of all traffic control and safety devices, in accordance with specifications outlined in the Dade County Public Works Manual. In addition, the Contractor shall provide all barricades, flashing warning lights and/or arrow boards necessary to maintain safety and warn motorists of the construction.

3.0.8. REPAIR OF DAMAGED PAVEMENT

A. All damage to pavement by the Contractor as a result of Work under this project shall comply with "DAMAGE BY CONTRACTOR", above, and shall be repaired in a manner satisfactory to the City. The repair shall include the preparation of the subgrade, the placing and compacting of the lime rock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.

B. The width of all repairs within the work area shall extend at least 12 inches beyond the limit of the damage. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other acceptable method so as to provide a clean edge to abut the repair. The line of the repair shall be uniform with no irregularities. Repair of damage by the Contractor beyond the work area shall be approved by the governing agencies having jurisdiction over the work prior to commencing the work.

3.0.9. CONCRETE PAVEMENT REPAIR

A. This type of repair shall be made only on Florida Department of Transportation roadways when the original pavement is concrete.

B. The existing pavement shall be saw cut in straight lines as outlined by the City at the location of the replacement. The pavement shall be removed and the fill shall be mechanically compacted to 98% of the maximum density obtainable as determined by AASHTO Standard T-180. The fill in the trench and shoulders shall be brought to a depth equal to the thickness of the existing concrete pavement, but not less than 8 inches in any case. The opening thus formed, shall be filled with concrete having a design strength of 5,000 psi and made with High Early Strength Cement. The concrete slab shall be reinforced with ½ inch steel reinforcing rods, 12 inches on center each way, placed 2 inches above the bottom of the slab. The surface of the slab shall be struck off with a screed and finished with a wood float and brush to conform to the grade and finish of the existing pavement. Apply liquid curing compound after initial set. The Contractor shall provide adequate means to protect the slab until it has cured sufficiently to withstand vehicular traffic without spalling or breaking apart. Construction joints and expansion joints in the original pavement shall be reproduced

in the repair with matching materials.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This section consists of pavement markings and traffic signs on the Drawings, specified herein and as required for a complete installation.

1.0.2. QUALITY ASSURANCE

A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

B. Pavement markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced in kind to the satisfaction of the Dade County Department of Public Works, Traffic Engineering Division, or other authority having jurisdiction over the work area.

1.0.3. CERTIFICATION

The Contractor shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at his expense all signs that fail to meet this requirement.

PART 2 – PRODUCTS

2.0.1. PAVEMENT MARKING

Paint for pavement strips shall be as specified in Part 3, Execution

2.0.2. REFLECTIVE MARKERS

Reflective markers shall be installed in the pavement in accordance with OSHA, DOT and Dade County Public Works requirements.

2.0.3. TRAFFIC SIGNS

A. General: Traffic regulating signs shall conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices (ANSI) and displaying the lettering and symbols indicated on the Drawings.

B. Sign Panels and Support Members: Sign panels and support members shall conform to Aluminum Association Alloy 6061-T6.

C. Bolts: Bolts shall conform to Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002-inches thick minimum and chromate sealed.

D. Nuts: Nuts shall conform to Aluminum Association Alloy 6269-T9.

E. Reflective Sheeting: Reflective sheeting shall conform to DOT Type A requirements.

F. Construction Warning Signs: The CONTRACTOR shall install traffic and warning signs during construction in accordance with OSHA, DOT and Dade County Public Works requirements.

PART 3 – EXECUTION

3.0.1. TRAFFIC PAINT

A. This type of pavement painting shall be used where no thermoplastic paint is required or as temporary paint during the time required for paving "cure" prior to application of thermoplastic paint markings.

B. Traffic paint used for this work shall conform with the requirements of Section 971-12 of the Florida Department of Transportation Standard Specifications for Road and bridge Construction, or, at the Contractor's option, fast dry traffic paint, as specified in D.O.T. Specifications, Section 971-13, may be used.

C. The colors of the paint shall be yellow or white, as existed before the repair.

D. All equipment shall be of a type and design which will readily produce the required uniformity of application of the stripes, both as to thickness of coating and alignment. The paint machine shall be of the spray type, capable of spraying the paint to the required "spread" without thinning of the paint. The paint tank shall be equipped with a mechanical agitator. The nozzle shall have cut-off valves which will apply broken or "skip" lines automatically. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.

E. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset. No paint shall be applied when moisture is present on the surface to be painted or when the air temperature is below 40 degrees F. Painting shall not be done when winds are sufficient to cause spray dust.

F. The surface which is to be painted shall be cleaned by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or soil shall be removed from the pavement before edge striping is begun.

G. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint will be allowed at any time. Before the start of each day's work, the paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

H. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips. Any stripes which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.

I. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires. While the center line stripes are being painted, all traffic shall be routed away from the painting operations and the newly painted stripe. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.

J. Any portions of the stripes damaged by passing traffic or from other causes shall be repainted.

K. Paint for temporary pavement markings shall also be used where thermoplastic markings are to be applied after the asphaltic concrete has "cured." The cure time shall be based on thermoplastic manufacturer's recommendations. However, in accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

3.0.2. THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

A. Thermoplastic pavement markings, including stripes, pavement messages, stop bars, directional arrows, reflective pavement markers and other miscellaneous items, shall be replaced as existed before the repair was made. The thermoplastic compound shall be extruded or sprayed onto the pavement surface in a molten state by mechanical means, with surface application of glass spheres, when required. Upon cooling to ambient pavement temperature, the compound shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation.

B. The colors of the compound shall be white or yellow, as existed before the repair.

C. Where thermoplastic markings are to be applied to concrete pavement, a sealing primer, as specified in F.D.O.T. Specifications Section 711-2.2, shall be applied in advance of the placing of the stripes.

D. The thermoplastic shall be applied to the pavement utilizing either extrusion or spray application equipment. The application equipment shall be so constructed as to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die or gun shall be so constructed as to prevent accumulation and clogging. The equipment shall be

constructed so that all mixing and conveying parts up to and including the shaping die or gun, maintain the material at the plastic temperature with heat transfer oil or electrical element controlled heat. Direct fire heat transfer will not be allowed.

E. The application equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off square stripe ends and shall provide a method of applying "skip" lines. The use of pans, aprons, or similar appliances which the die overruns will not be permitted.

F. Glass spheres applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.

G. Special kettle(s) shall be provided for melting and heating the thermoplastic material. The kettle(s) shall be equipped with automatic thermostatic control devises to provide uniform temperature control and prevent overheating of the material. The applicator and kettle(s) shall be equipped and arranged as to satisfy the requirements of the National Fire Underwriters, the State of Florida, Dade County and any municipal authority applicable to where the work is being done.

H. Applicators shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The applicator equipment to be used on roadway installations shall consist of either hand equipment or truck mounted units depending on the type of marking required.

I. The hand applicator equipment shall be insulated, have sufficient capacity to hold 150 pounds of molten material, and be sufficiently maneuverable to install crosswalks; lane, edge and center lines; arrows and legends.

J. The truck mounted unit for lane, edge and center lines shall consist of a mobile selfcontained unit carrying its own material capable of operating at a minimum speed of five miles per hour while installing striping.

K. Application time, weather limitations and surface preparation shall be in accordance with F.D.O.T. Specifications Sections 710-4, 710-5 and 710-8. In accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

L. The material, when formed into traffic stripes or other markings, shall be readily renewable by placing an overlay of new material directly over an old line of compatible material in such a manner that no splitting or separation takes place.

M. The application temperature shall be within the range specified by the manufacturer of the thermoplastic compound being used.

N. All pavement edge lines, gore, island and diagonal strip markings, bike lane symbols and messages, wherever located, shall have a minimum thickness of 0.060 inch at the

edges and a maximum thickness of 0.120 inch at the center. A minimum average film thickness of 0.060 inch shall be maintained. All lane lines, center lines, transverse markings (except shoulder markings) and pavement markings within traffic wearing area (such as dotted turning guide lines) shall have a minimum thickness of 0.090 inch at the edges and a maximum thickness of 0.188 inch at the center. A minimum average film thickness of 0.090 shall be maintained. All thickness measurements shall be an average in any three foot length.

O. The glass sphere top coating shall be applied by a type of glass sphere dispenser or gun which will embed the spheres into the line surface to at least one-half their diameter. The glass sphere top coating shall not incur more than a 10 percent loss during the first 30 days of traffic exposure.

P. Reflective pavement markers shall be installed as they existed before the repair. They shall be replaced with the appropriate color or colors and oriented in the correct direction as specified in Section 706 of the F.D.O.T. Specifications. Paving markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, as revised by the governing agency.

3.0.3. FABRICATION

Preparation of sign blanks and fabrication of reflectorized faces shall conform to the applicable requirements of DOT Sections 700-4 and 700-5.

END OF SECTION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

A. Work included in this Section includes tree removal, tree relocations, furnishing and planting trees, plants and grass of the species, sizes and quality specified, fertilizing, watering, maintaining plants, guarantee and obtaining all permits from municipalities having jurisdiction over this work.

B. The schedule of trees and plants, if applicable, is shown on the drawing, and indicates the common and botanical names, the quantities and sizes of plants to be used.

C. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf with well developed root systems free of disease and insects, pests, eggs or larvae. No plants will be accepted unless healthy and showing satisfactory foliage conditions.

1.0.2. Solid sod and grass submittal to be submitted to the Engineer or Record for approval prior to installation.

PART 2 - PRODUCTS

2.0.1. GRASSING, SOLID SOD AND SEED:

A. General:

1. Solid sod shall be planted in the unpaved areas abutting the structures and extending to the limits shown on the Plans.

2. Grass seeding: All other unpaved areas shall be planted with grass seed and mulched.

3. When solid sod or grass seed is to be placed adjacent to or in close proximity to existing sod or grass, the Contractor is to use similar sod or grass and obtain approval from the Engineer of Record prior to installation. In public areas and right-of-ways the Contractor is also required to comply with Governmental Agency requirements and provide the City with written approval of said agency prior to installation of grass and sod.

B. Materials:

1. Solid Sod:

a. Solid sod shall be certified bitter blue St. Augustine Floratam. The sod shall be firm touch texture having a compact growth of grass with good root development. It shall contain no weeds or other objectionable vegetation.

b. The soil embedded in the sod shall be good clean earth, free from stones and other debris. The sod shall be free from fungus, vermin and other diseases. The sod and soil shall be approximately 2" thick.

c. Before being cut and lifted, the sod shall have been mowed at least three times with a lawn mower, with the final mowing not more than seven days before the sod is cut. The sod shall be cut into uniform dimensions approximately 12" X 24". Abutting joints shall be free of open spaces with a tamped or rolled surface so that there are no joint openings.

2. Topsoil: Soil utilized for planting grasses shall be a mixture of pulverized 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps or other impurities or debris. All soil shall be delivered in a loose friable condition. Topsoil may be "unsuitable top soil" removed during the course of other work hereunder, if approved by the Engineer of Record. Topsoil shall be free of undesirable plants and seeds. Any such plants sprouting from areas of recent topsoil application shall be presumed to have originated in the topsoil and shall be eradicated from the area by the Contractor at his expense. Means of eradication shall be submitted to the Engineer of Record for approval.

C. Planting of Grassing:

1. Solid Sod: Unless otherwise directed by the Engineer, four inches of topsoil shall be placed. The ground area shall be saturated with water. Sod shall be placed on the graded and watered ground firmly butted on all sides by sod without leaving holes, slots, or depressions. Sod shall be top dressed with soil (herein before specified) where required to bring all fill to voids and provide a uniform grass matt if approved by the Engineer of Record. Soil shall firmly abut all structures to which it surrounds or contacts. Immediately after the grassing process, the entire grassed or mulched area shall be rolled thoroughly with a cultipacker traffic approved roller, or other 1,000 pound roller. At least two trips over the entire area will be required.

2. Grass Seeding: As above, place four inches of topsoil and saturate with water. Thereafter seed and mulch

D. Fertilizing Grassing:

1. Commercial fertilizers shall comply with all Federal, State and County fertilizer laws.

2. The numeral designations for fertilizer indicate the minimum percentage (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water soluble potash, contained in the fertilizer.

3. Designations may be approved specifically for a particular project and if liquid fertilizer other than that of chemical designation 8-8-8 is used, the total nitrogen content shall not exceed 12 percent.

4. At the Contractor's option liquid or dry fertilizer may be used. All grass shall be fertilized and watered in during the planting operation using the application rate and method directed by the manufacturer of the fertilizer used.

E. Guarantee and Maintenance of Grassing:

1. Guarantee:

a. The Contractor shall guarantee all grasses for a period of six months from the date of acceptance of the completed overall project from the Contractor.

b. The Contractor shall guarantee the grasses shall be alive, free of disease and have a healthy appearance at the end of the guarantee period.

c. During the guarantee period, the Contractor shall replace any grass which is diseased, dead or visually unsightly within 3 days when requested in writing.

2. Maintenance:

a. The Contractor shall maintain all grass guaranteed above for the period of the guarantee. Such maintenance shall include filling, leveling, and repairing eroded areas, replanting areas where the establishment of the grass does not develop satisfactorily, and watering as required. In no case shall such maintenance be less than 3 weeks for watering and 6 weeks for remaining maintenance care.

b. The maintenance of the grass shall include, regular mowing, one application of approved dry or liquid fertilizer to the grasses guaranteed above. The fertilizer shall be applied and watered in as directed by the manufacturer. The time of fertilizing shall be approved.

c. The Contractor shall be required under the maintenance of the guaranteed grasses to safeguard and take all possible precautions against damage from the elements and other possible damage. The Contractor shall be required to clean up the effected landscape area during the maintenance period due to any such event. The Contractor shall not be responsible to replace grasses properly protected under this item of the specifications, damaged by the events beyond his control.

2.0.2. PLANTS AND TREES: (If required by relocation and if shown on the drawings)

A. Grade Standards and Quality:

1. Quality of all plants shall be at least equal to that defined as No. 1 by the State Plant Board of Florida in Grades and Standards for Nursery Plants, Part I, 1963 Revised Edition, and Part II, Palms and Trees.

2. All plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall have healthy, well developed root systems and shall be free of disease and insect pests, eggs or larvae.

3. No plants will be accepted unless they are healthy and show satisfactory foliage conditions.

4. All plants shall conform to the measurements specified or indicated on the Drawings except that up to 10 percent of undersized plants in any one variety or grade may be used provided there are sufficient oversized plants to make the average equal to or above specified grade. Plants larger than specified may be used if approved by the Engineer of Record, but use of such plants shall not increase the Contract price. The spread of roots or ball of earth for larger plants shall be increased in proportion to the size of the plant.

B. Plant Designation: With reference to method of cultivation, root system status, etc., plants for landscaping shall be classified under the following designations:

1. Balled and Burlapped:

a. Plants so classified shall be dug with firm natural root balls of earth, of sufficient diameter and depth to include most of the fibrous roots. The root ball of these plants shall be properly wrapped with burlap sack material and remain protected and moist until they are planted. Plants whose burlapped balls have cracked or become sagging, or plants showing scars from rope and cable marks or other improper handling are not acceptable. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet moss, or other acceptable material. The plants shall be set with the burlap cover intact and with the burlap showing, until inspection. At final inspection, the burlap may be cut away to ground level and completely covered with soil.

b. It is required that, balled and burlapped materials, 1½ inches or more in caliper, shall be root-pruned at least 45 days before being dug and such fact shall be certified on accompanying invoices. Where, in the opinion of the Engineer of Record following his inspection of the grower's stock, adequate root pruning is being obtained by the grower's general cultivating practices, he may consider such fact as meeting this requirement.

2. Wire Balled and Burlapped:

    a. Plants grown in soil of a loose texture which does not readily adhere to the root system shall have sound hog wire placed around the burlapped ball before the plant is removed from the excavation. The wire shall be looped and tensioned until the burlapped ball is substantially packaged so as to prevent loosening of the soil around the roots during handling.

    b. Wire balled and burlapped plants shall otherwise comply with the requirements for balled and burlapped plants described in 1 above.

3. Container Grown Plants:

    a. Container grown plants shall have been grown in a container large enough and for sufficient time for the root system to have developed well enough to hold its soil together firm and whole. No plants shall be loose in the container. Plants which have become pot bound or for which the top system is too large for the size of the container, will not be acceptable.

    b. All containers with vertical sides shall be cut and opened fully, in a manner such as will not damage the root system. Container grown plants shall not be removed from the container until immediately before planting, when all due care shall be taken to prevent damage to the root system.

4. Bare-Root Plants: No bare-root plants shall be used unless specifically required by the Engineer of Record or called for on the drawings.

5. Palms:

    a. Palm species shall have the roots adequately wrapped before transplanting except when they are container grown. Burlapping will not be required if the palm is carefully dug from marl or heavy soil that it adheres to the roots and retains its shape without crumbling. During transporting and after arrival, root balls of palm shall be carefully protected from the wind and exposure to the sun. After delivery to the job site, if palm is not planted within 24 hours, the root ball shall be covered with a moist material.

    b. All moving of sabal, coconut and royal palms shall be in accordance with Heavy Trunk Palms, as described in "Florida Grades and Standards for Nursery Plants, Part II".

6. Rooted Cuttings: Cuttings shall be kept moist at all times. They shall be rooted in a medium other than wood shavings and have at least 4 root tips of ½-inch or longer.

C. Transportation and Inspection:

1. Plant transportation shall comply with all Federal and State regulations therefor and, upon delivery at the site, all plants shall be inspected for conformity to specifications and for handling damage. Rejected plants shall be removed immediately from the site by the Contractor.

2. Foliage trees when moved in full leaf shall be treated with "Wilt Pruf" or "Plantguard", as they are loaded at their growing site. This material shall be applied to the entire tree with a fine spray at a dilution of 1 part "Wilt Pruf" or "Plantguard" to 15 parts of water.

3. Trees which have to be transported in excess of 10 miles to reach the job site, shall be covered with a 70 percent shade-cloth-tarp, or equal in order to prevent wind burn.

4. Immediately following the delivery and inspection at the job, all plants with exposed roots shall be heeled-in moist soil or peat moss. All plants heeled-in shall be properly maintained by the Contractor until planted.

5. The balls of balled and burlap plants, must, if not immediately planted after delivery and inspection, be adequately protected by covering until removed for planting, in a manner appropriate to prevailing conditions and in accordance with accepted horticultural practices. The Contractor shall, in loading, unloading, or handling of plants, exercise utmost care to prevent injuries to the branches or roots of the plants. The solidity of the ball of balled and burlapped plants shall be carefully preserved. Handling of the plant by parts other than the ball shall be cause for rejection of such plant. Bare root plants which have been heeled-in shall be properly handled during the distribution of planting beds.

D. Planting Materials:

1. Planting Soil: Planting soil shall be a pulverized mixture of 50% rock free siliceous sand and 50% clean mulch from an approved source. All ingredients shall be free of sticks, roots, rocks, lumps, or other impurities or debris. All soil shall be delivered in a loose friable condition.

2. Fertilizer:

   a. Fertilizer shall be as specified in subsection 2.01-D, herein.

   b. Fertilizer shall be selected and used as recommended by the manufacturer for each particular plant.

3. Mulch: Mulch shall be ground bark, bark peelings, peat, hay or straw. Cypress mulch shall not be used because its harvest degrades cypress wetlands.

4. Anti-Desiccant: Anti-desiccant shall be "Wilt Pruf", "Plantguard", or equal, delivered in the manufacturer's containers and used in accordance with the manufacturer's instructions.

5. Water:

   a. Water for the irrigation of the new plantings during the progress of construction shall be provided by the Contractor in accordance with the provisions previously specified.

   b. The Contractor shall furnish adequate watering equipment and shall continue watering to properly establish the new plantings throughout the maintenance period.

6. Wire: Wire for the bracing and guying shall be pliable No. 12 or No. 14 gauge galvanized soft steel wire.

7. Stakes and Ties: Stakes and ties shall be provided in accordance with the requirements of PART 3 EXECUTION, below.

PART 3 - EXECUTION

3.0.1. EXCAVATION OF PLANT HOLES:

A. Plant hole excavations shall be roughly cylindrical in shape, with the sides approximately vertical. Plants shall be centered in the hole, with the trunk location as shown in the Plans.

B. Bottoms of the holes shall be loosened at least 6-inches deeper than the required depth of excavation.

C. Holes for balled and burlapped and wire balled and burlapped plants shall be large enough to allow at least 8-inches of backfill around the earth ball. For root balls over 18-inches in diameter, this dimension shall be increased to 12-inches.

D. Where excess material has been excavated from the plant hole, the excavated material shall be disposed of as and where directed by the Engineer of Record.

E. PREPARATION OF GROUND

   1. Four inches minimum thickness of topsoil shall be placed over the areas off the right of way on which the sod is to be placed.

F. APPLICATION OF FERTILIZER

1. Before applying fertilizer, the soil pH shall be brought to a minimum range of 6.0 - 7.0.

2. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 500 pounds per acre, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4-inches.

3. On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2-inches.

G. PLACING SOD

1. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools. Sod areas abutting concrete, asphalt or other applicable surfaces shall have the soil depressed at edges of the pavements so that the cut grass does not protrude over 2-inches above the adjacent property.

2. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6-inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

3. On steep slopes, the Contractor shall, if so directed by the Engineer of Record, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.

4. Sod which has been cut for more than 72 hours shall not be used unless specifically authorized by the Engineer of Record after his inspection thereof. Sod which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

5. Sodding shall not be performed when weather and soil conditions are, in the Engineer of Record's opinion, unsuitable for proper results.

H. WATERING

1. The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer of Record, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod

roots and starts to grow for a minimum of 60 days (or until final acceptance whichever is latest).

3.0.2. UNDERGROUND OBSTRUCTIONS:

A. In the event that rock, underground construction work, utility lines or obstructions out of the ordinary are encountered in any plant hole excavation, alternative locations will be selected by the Engineer of Record.

B. Where locations cannot be changed and the obstructions may be removed, the obstructions shall be removed to a depth of not less than 3-feet below grade and not less than 6-inches below bottom of balls or roots when plant is properly set at the required grade.

3.0.3. SETTING OF PLANTS:

A. When lowered into the hole, the plant shall rest on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance. The Contractor, when setting plants in holes, shall make allowances for any anticipated settling of the plants.

B. The backfill shall be made with planting mixture as specified hereinbefore and shall be firmly rodded and watered-in, so that no air pockets remain. The quantity of water applied immediately upon planting shall be sufficient to thoroughly moisten all the backfilled earth. Plants shall be kept in a moistened condition for the duration of the Contract.

3.0.4. STAKING AND GUYING:

A. When called for on the Drawings or directed by the City, plants shall be staked in accordance with the following provisions:

1. Small Trees: For trees and shrubs of less than 1-inch caliper, the size of stakes and the method of tying shall be such as to rigidly support the staked plant against damage caused by wind action or other effects. Trees larger than 1-inch and smaller than 1½ inch caliper shall be staked with a 2-inch square stake driven at least 24-inches in the ground and extending to the crown of the plant. The plant shall be firmly fastened to the stake with two strands of 14 gauge soft wire, enclosed in rubber hose, or other approved covering. The wire shall then be nailed or stapled to the stake to prevent slippage.

2. Medium Trees: All trees, other than palm trees, larger than 1½-inch caliper and smaller than 2½-inch caliper shall be staked with two or more, 2-inch by 2-inch stakes, 8-feet long, set 2-feet in the ground. The tree shall be midway between the stakes and held firmly in place by two strands of 12 gauge wire, applied as specified above for single stakes. Tie wires shall be tightened and kept tight by twisting.

3. Large Trees: All trees, other palm trees, larger than 2½-inch caliper, shall be guyed from at least 3 points with double strands of 12 gauge wire. Guy wires shall be anchored to 2-inch by 4-inch stakes, 24-inches long, driven into the ground at least 2-feet and sufficient that the top of the stake is at least 3 inches below the finished ground level. In firm rock soils, No. 4 steel reinforcing rods or ½-inch pipe may be used instead of 2 by 4's. Tie wires shall be securely fastened to the tree by means of a collar of rubber hose, or other approved material. Guy wires shall be tightened and kept tight by twisting.

4. Palm Trees: Brace palm trees with three or more 2-inch by 4-inch wood braces, toenailed to cleats which are securely banded at two points to the palm, at a point at least 6-feet above the ground. The trunk shall be padded with five layers of burlap under the cleats. Braces shall be approximately equidistantly spaced and secured underground with 2-inch by 4-inch by 24-inch stake pads. In firm rocky soils, No. 4 steel reinforcing rods or ½-inch pipe is acceptable.

3.0.5. PRUNING:

All broken or damaged roots shall be cut off smoothly and the tops of all trees shall be pruned in a manner complying with standard horticultural practice. At the time pruning is completed, all remaining wood shall be alive. All cut surfaces of 1-inch or more in diameter, above the ground, shall be treated with an approved commercial tree paint.

3.0.6. MULCHING:

Within one week after the planting, mulch material, approved by the Engineer of Record, shall be uniformly applied to a minimum thickness of 2-inches, over the entire area of the backfilled hole or bed. The mulch shall be maintained continuously in place until the time of final inspection. Mulch is not required if other ground surface covers, such as rooted cuttings are called in the Plans.

3.0.7. INSPECTION:

On completion of the work, the Engineer of Record will inspect all planting work. The Contractor shall repair or replace all defective work, whichever is unsatisfactory to the Engineer of Record or the City. Preliminary acceptance of all plant materials will be given only after the materials are planted and after meeting all requirements prescribed herein.

3.0.8. MAINTENANCE:

A. Maintenance shall begin immediately after each plant is planted and shall continue until all work under this Contract has been completed and final acceptance is obtained from the City, however, the minimum period of this maintenance shall not be less than 60 days even if it extends beyond final acceptance of contract. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and

protected. Settled plants shall be reset to proper grade position, planting saucer restored and dead material removed. Guys shall be tightened and repaired.

B. Defective work shall be corrected as soon as possible after it becomes apparent. Upon completion of planting, the Contractor shall remove from the site excess soil and debris, and repair any damage to structures, etc., resulting from planting operations.

3.0.9. GUARANTEE:

The Contractor shall guarantee all planting work for a period of six months after the date of final acceptance. During the guarantee period, the Contractor shall replace at no cost to the City any plant that dies or is not established within the guarantee period. Any plants missing or defective shall be furnished or replaced in a manner satisfactory to the City.

END OF SECTION

DIVISION 3 – CONCRETE

03300 CAST-IN-PLACE CONCRETE, REINFORCING AND FORMWORK

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Provide all labor, materials, equipment, fabrication, incidentals, transportation, placing and supervision necessary to complete all cast-in-place concrete work, its finishing, and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation.

B. Work affecting this Section includes, but is not limited to:

1. Shop Drawings-Per General Conditions and as specified herein.
2. Materials and storage thereof.
3. Reinforcing-Bar and fabric.
4. Accessories of every nature, including form tie system.
5. Formwork and removal thereof, including shoring and reshoring.
6. Concrete proportions and mixes.
7. Placing of concrete.
8. Admixtures.
9. Joints, metal joint screeds and joint fillers.
10. Finishes of all types.
11. Protection and curing.
12. Patching.
13. Laboratory Testing.

1.0.2. QUALITY ASSURANCE

A. Unless otherwise indicated, all materials, workmanship and practices shall conform to the requirements of ACI 301-96 "Specifications for Structural Concrete for Buildings", except as modified by supplemental requirements hereinafter.

B. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

C. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

D. Work shall be performed in accordance with Contract Documents, Drawings, and/or City of Opa-Locka Public Works Manual Specifications and Standard Details, in a neat and accurate manner. It is the intent of the City to obtain a complete and working installation according to these Specifications, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the project plans or stated herein.

1.0.3. STANDARDS

A. ACI 301-96 Specifications for Structural Concrete.

B. ACI 318-95 Building Code Requirements for Reinforced Concrete.

C. Florida Building Code, latest edition.

D. ACI 117-90 Standard Specifications for Tolerances for Concrete Construction and Materials

PART 2 – PRODUCTS

2.0.1. GENERAL

C. All reinforced concrete structures shall conform to ACI 301, ACI 302.1R, ACI 305, ACI 306, ACI 315, ACI 318, and ACI 350.

D. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic workable mixture in accordance with all requirements under this Section suitable to the specific conditions of placement.

2.0.2. CEMENT

G. The cement shall be a standard brand of Portland cement manufactured within the continental limits of the United States. It shall meet the requirements of ASTM C150 "Portland Cement" and shall be Type II.

H. The total alkalies in the cement (calculated as the percentage of NA2O plus 0.658 times the percentage of K2O) shall not exceed 0.40%.

I. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

J. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the City or their designee. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.

K. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected.

2.0.3. FLY ASH

A. If fly ash is used as supplementary cementitious material, it shall meet the physical and chemical requirements of ASTM C618 Class F, except that the loss of ignition shall not exceed 4%. Sampling and testing of fly ash shall follow the requirements of ASTM C311.

B. For Type A1 concrete as required for use in environmental engineering concrete structures, inclusion of fly ash or slag cement in the concrete mix is mandatory

2.0.4. SLAG CEMENT

Q. Slag cement shall meet the requirements of ASTM C989 including tests for effectiveness of slag in preventing excessive expansion due to alkali-aggregate reactivity as described in Appendix X-3 of ASTM C989.

R. For Type A1 concrete as required for use in environmental concrete structures, i.e., process structures or fluid containing structures, inclusion of fly ash or slag cement in the concrete mix, is mandatory.

2.0.5. WATER

A. The water used in mixing the concrete shall be from potable water supplies that are approved by the Florida Department of Health.

2.0.6. AGGREGATES

A. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C33.

B. Coarse Aggregate: Coarse aggregate shall consist of gravel, broken stone or local limerock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C33 unless otherwise specified. It shall be free from adherent coatings.

C. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C136.

D. When tested for soundness in accordance with ASTM C88, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.

E. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the ratio of silica released to reduction in alkalinity shall not exceed 1.0.

F. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

G. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.

2.0.7. ADMIXTURES

A. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall provide entrained air in the concrete in accordance with ASTM C260.

B. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.

1. Water reducing admixture shall conform to ASTM C494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzolith Series” by BASF, and “Plastocrete Series” by Sika Corporation.

2. High range water reducer shall be sulfonated polymer conforming to ASTM C494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured

and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are "Eucon 37" or Plastol 5000 by the Euclid Chemical Company, "Master Rheobuild 1000 or Master Glenium Series" by BASF, and "Daracem 100 or Advaflow Series" by W.R. Grace. High range water reducer shall be mandatory for class A1 concrete intended for placement in walls.

3. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the City or their designee. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are "Accelguard 80/90 or NCA" by the Euclid Chemical Company and "Daraset" by W.R. Grace.

4. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are "Eucon NR or Eucon Retarder 100" by the Euclid Chemical Company, "Pozzolith Retarder" by BASF, and "Plastiment" by Sika Corporation.

C. Admixtures containing calcium chloride, thiocyanate or more than 0.05 chloride ions are not permitted

D. Portland cement and reinforcing steel: Comply with ACI 301 and, with all modifications and supplements thereto listed in Part 3 of this specifications.

2.0.8. CONCRETE MIX DESIGN

A. The proportions of cement, aggregates, admixtures, and water used in the concrete mixes shall be based on the results of field experience or preferably laboratory trial mixes in conformance with Section 5.3. "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318 and ACI 350. When trial mixes are used, they shall also conform to Article 3.01 of this Section of the Specifications. If field experience records are used, concrete strength results shall be from concrete mixed with all of the ingredients proposed for use on job used in similar proportions to mix proposed for use on job. Contractor shall submit verification confirming this stipulation has been followed. Field experience records and/or trial mix data used as the basis for the proposed concrete mix design shall be submitted to the City or their designee along with the proposed mix.

B. Structural concrete shall conform to the following requirements. Cementitious materials refer to the total combined weight of all cement, fly ash, and slag cement contained in the mix.

1. Compressive Strength (28 day)

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1	4,500 psi (minimum)
Concrete Class A2	4,000 psi (minimum)
Concrete Class B	3,000 psi (minimum)

2. Water/cementitious materials ratio, by weight

CONCRETE CLASS	MAXIMUM	MINIMUM
Concrete Class A1	0.42	0.39
Concrete Class A2	0.45	0.39
Concrete Class B	0.50	0.39

3. Slump Range

   a. 4" nominal unless high range water reducing admixture is used.

   b. 8” max if high range water reducing admixture is used

4. Air Content

CONCRETE CLASS	COMPRESSIVE STRENGTH
Concrete Class A1, A2	6% ± 1.5%
Concrete Class B	3% Max (non air-entrained)

2.0.9. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Reinforcing of curbs and gutters shall be in accordance with City of Opa-Locka Public Works Manual Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways

2.0.10. REINFORCING STEEL

A. Bar reinforcing shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.

B. Reinforcing supports shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).

C. Precast concrete blocks to space and support the reinforcing bars may be used to support and position bottom reinforcing steel. Use concrete blocks with a strength equal to or greater than the concrete in which they are to be placed and have wires cast into them for fastening to the reinforcing bars. Moist-cure the blocks for at least three days.

D. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.

E. All reinforcement shall be entirely free of rust, scale, grease, or other coating which might destroy or reduce its bond with the concrete.

F. Curbs and gutters shall be in accordance with Miami Dade County or FDOT's Standard Details.

G. Welded wire fabric reinforcing shall conform to the requirements of ASTM A1064. Welded wire fabric shall be 6X6-W1.4xW1.4 steel to be used in all sidewalks and driveways.

2.0.11. FORMS

A. Burlap mats: Conform to AASHTO Specification M182. (Burleen non-staining mats.)

B. Epoxy bonding agent: A two (2) component, solvent free, moisture insensitive structural epoxy adhesive conforming to ASTM C881 Type II, Sikadur 32 Hi-Mod, as manufactured by Sika Corp., Concresive 1090 Liquid by Master Builders or approved equal.

C. Anchor bolts, nuts and washers shall be American made 316 stainless steel.

D. Dovetail slots: Galvanized steel, 22 gauge, 1"x 1", with 5/8" throat, fiber filled.

E. Forms:

1. Plywood Forms: PS-1, B-B Concrete Form, Class I, exterior type, mill oiled and edge sealed. Thickness shall be as required to support concrete at the rate placed, but not less than 3/4".

2. Steel Forms: Uncoated steel, 3/16"-inch minimum thickness, fabricated to close tolerances, protected only by the specified release agent, braced so as not to dent, bend or dimple under wet concrete loads, vibrator impact and tool impact. Maintain steel forms in rust free condition by use of steel wool and light grinding, followed by coats of the specified release agent. Forms should be adjustable to be brought into true alignment without steps or ridges.

F. Form release agent:

1. For plywood forms use a natural non-petroleum base, non-staining and non-retarding release agent that will effectively prevent absorption of moisture and prevent bond with concrete and leaves the concrete with a paintable surface.

2. For steel forms, use an approved material that will not stain, color or otherwise affect the finish of the concrete. Form coating shall not be detectable on finished surfaces.

3. Round column forms: Provide seamless fiber forms with the three plies nearest to the interior surface of the form deckled or scarfed and overlapped to minimize spiral gaps or seams on the column surface.

G. Form Ties: Steel rod type with integral waterstops and cones, and with ends or end fasteners that can be removed without spalling the concrete and which leave a hole equal in depth to the required reinforcement clearance, but not less than 2 inches from the formed face of the concrete. Wire tie, banding wire and wood spreaders will not be permitted.

H. Form Inserts:

1. Bevel or chamfer strips: Wood or non-staining plastic, 3/4" wide on each leg at exposed edges of concrete members, unless otherwise noted on plans.

2. Tongue and Groove Joint Forms: Minimum 24 gauge with steel stakes and splice plates. Forms shall be designed for joints not to receive a poured seal.

3. Pipe hangers and other utility supports: AISI Type 316 stainless steel.

2.0.12. MORTAR

A. Standard premixed mortar conforming to ASTM C387, Type S, or proportion 1 part Portland cement to 2 parts clean, well-graded sand which will pass a 1/8-inch screen. Portland Cement shall conform ASTM C150.

B. Sand shall conform to AASHTO M45.

C. Admixtures may be used not exceeding the following percentages of weight of cement:

1. Hydrated lime: 10 percent

2. Diatomaceous earth or other inert materials: 5 percent.

D. Consistency of mortar shall be such that it will readily adhere to concrete

2.0.13. GROUT

A. Non-Shrink Grout: Non-shrink, non-metallic grout conforming to ASTM C 1107 Grade B or Grade C only. Grout must meet ASTM C 1107 at a temperature range of 50 F to 90 F at a flowable consistency. A minimum compressive strength of 5,000 pounds per square inch (psi) shall be obtained at 28 days.

B. Grout for Surface Repair and Bond Coat:

1. For repair, one part Portland cement to two parts fine sand, and a 50%of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent by Master Builders) to produce a stiff mortar.

2. For bond coat, one part Portland cement to one part sand, and a 50% of water and 50% Acryl 60 or equal (Thoroseal or Acryl Set Bonding Agent) to produce a slurry mix.

C. Moisture Barrier: Kraft paper and glass reinforcing fibers sandwiched between 2 layers of polyethylene film with a permeance rating of maximum 0.1 as per ASTM E-96, Procedure A.

D. Expansion Joint Filler:

1. Preformed expansion joint filler shall be of the non-extruding and resilient bituminous type and conform to the requirements of AASHTO Designation M 213.

2. Expansion joint filler shall be gray neoprene sponge rubber that conforms to AASHTO Designation M 153, Type I.

Q. Joint Sealant Compound: Non-sag, 2 component, solvent free, moisture insensitive, flexible, epoxy resin conforming to the requirements ASTM C920-87 Type M, Grade NS. Additionally, the sealant must be recommended by the manufacturer to perform under continuous immersion in water.

R. Polyurethane Elastomeric Sealant: Sikaflex-2c, NS/SL or approved equal. Provide a 2- component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a non-sag and self-leveling consistency. Sealant shall meet ASTM C-920 and Federal Specifications TT-S-00227E.

1. Joint Movement: +50%.

S. Waterstops:

1. Polyvinyl chloride (PVC): Conforming to the requirements of U.S. Army Corps of Engineers Specification CRD-C-572 and of the following type:

a. Expansion Joints: 9-inches by 3/8-inch, ribbed center bulb.

b. Construction Joint: 9-inches by 3/8-inch, flat ribbed.

c. Only where specified on plans at construction and expansion joints: 9-inches by 3/8-inch, split ribbed.

2. Thermoplastic butt splices shall be performed using approved prefabricated pretested fittings; do not lap splice waterstops.

3. Waterstops for impermeable joints between prefabricated structures Non-hydro expansive based on bituminous resins to seal horizontal and vertical joints; hydrostatic load resistance 7 m column of water; not soluble in water; flashpoint 315degree Celsius ASTM D92; elongation capacity at 20 degree Celsius 230% compared to its initial dimension. Suitable for tunnels, water treatment plants, sewage, septic tanks, tanks, pipelines, sewer trunk lines and for any prefabricated concrete structure in general.

T. Fiber Reinforcement: Fiber reinforcement shall not be used in the concrete unless ordered buy the Engineer in writing. It shall consist of 100% virgin polypropylene fibrillated fiber dosage of 2 lbs. per cubic foot.

1. Compressive Strength: 1 psi (.006895 M Pa), ASTM C-39.

2. Flexural Strength: 288 psi (2.0 M Pa) after 7 days, 390 psi (2.7 M Pa) after 28 days; ASTM C-78.

3. Splitting Tensile Strength: 194 psi (1.3 M Pa) after 7 days, and 290 psi (2.0 M Pa) after 28 days; ASTM C-496.

4. Source: Fiber mesh Micro-Reinforcement System by Fiber mesh Company, Division of Synthetic Industries, Inc. Or approved equal.

U. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

V. A shrinkage reducing admixture (Teraguard) or equivalent at the rate of 2.2% by weight of cement may be used in the concrete to meet the shrinkage limitations.

W. To protect the concrete slab against the elements, the Engineer may direct the Contractor to spray an evaporation retarder on the finished concrete slab immediately behind the cement finishing process at no additional cost to the City. This is not a curing compound.

PART 3 – EXECUTION

3.0.1. READY MIX CONCRETE

A. Concrete obtained from a ready-mix plant shall conform to the requirements of these Specifications, and all applicable portions of ASTM C94 "Ready-Mixed Concrete".

3.0.2. MIXING AND DELIVERING CONCRETE

A. Produce a completely uniform mixed concrete in a truck mixer for 70 to 100 revolutions at the mixing speed designated by the truck manufacturer.

B. Prior to starting the discharge of the concrete at the jobsite, when water is added, record the added quantity and mix the concrete 30 additional drum mixing revolutions. Do not make more than two mix adjustments. Seek approval from the Engineer prior to using a central mixer and depositing the batch into a truck mixer.

C. Transit Time Using Agitator Trucks: The maximum allowable transit time between the initial introduction of water into the mix and completely discharging all the concrete from the truck will be 60 minutes. The maximum transit time can be 90 minutes if water reducing and retarding admixture (Type D, Type G, or Type II) is used. Reject concrete exceeding the maximum transit time.

D. All the concrete in a load must be in its final placement position a maximum of 15 minutes after the transit time has expired unless a time extension is approved by the Engineer.

E. Adding Water to Concrete at the Placement Site: Water may be added at the placement site provided the addition of water does not exceed the water to cementitious materials ratio as defined by the mix design. After adding water, perform a slump test to confirm the concrete is within the slump tolerance range stated in Section 2.01. If the slump is outside the tolerance range, reject the load. If an adjustment is made at the concrete production facility, perform a slump test on the next load to ensure the concrete is within the slump tolerance range. Do not place concrete represented by slump test results outside of the tolerance range. Include water missing from the water storage tanks upon arrival at the project site in the jobsite water added

3.0.3. PLACING CONCRETE

A. Weather Restrictions

1. Concreting in Cold Weather: Do not place concrete when the air temperature at placement is below 40ºF. The requirements of concreting in cold weather do not apply to precast concrete mixing and placement operations occurring in a temperature-controlled environment.

2. Concreting in Hot Weather: Hot weather concreting is defined as the production, placing, and curing of concrete when the concrete temperature at placing exceeds 85ºF but is less than 100ºF . Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85ºF at the time of placement. Concrete temperature shall be measured per ASTM C1064. Regardless of special measures taken, reject concrete exceeding 100ºF. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

B. Inspections Before Placing Concrete: Do not place concrete until the depth and character of the foundation and the adequacy of the forms and falsework have been

approved by the Engineer. Do not deposit any concrete until all reinforcement is in place and has been inspected and approved by the Engineer.

C. Exposure to Water: Do not expose concrete other than seal concrete in cofferdams to the action of water before final setting. Do not expose such concrete to the action of salt or brackish water for a period of seven days after placing the concrete. Protect the concrete during this period by keeping salt or brackish water pumped out of cofferdams.

D. Deposit concrete as nearly as possible in its final position. Do not deposit large quantities at one point and then run or work it along the forms. Take special care to fill each part of the forms, to work coarse aggregate back from the face, and to force concrete under and around reinforcing bars without displacing them.

E. Use a method and manner of placing concrete that avoids the possibility of segregation or separation of aggregates. If the Engineer determines that the quality of concrete as it reaches its final position is unsatisfactory, remove it and discontinue or adjust the method of placing until the Engineer determines that the quality of the concrete as placed is satisfactory.

F. Use metal or metal-lined open troughs, chutes, or other means of concrete conveyance which have no aluminum parts in contact with the concrete. As an exception, chutes made of aluminum for ready mixed concrete trucks, no longer than 20 feet, may be used. This exception does not apply to any other means of concrete conveyance. Where steep slopes are required, use chutes that are equipped with baffles or are in short lengths that reverse the direction of movement. Where placing operations would involve dropping the concrete freely more than 5 feet, deposit it through pipes, troughs, or chutes of sheet metal or other approved material. Use troughs, chutes, or pipes with a combined length of more than 30 feet only with the City''s authorization. Keep all troughs, chutes, and pipes clean and free from coatings of hardened concrete by thoroughly flushing them with water after each run or more often if necessary.

G. Place concrete against supporting material that is moist at the time of concrete placement. If additional water is required, uniformly apply it ahead of the concrete placement as directed by the Engineer. The Contractor may use a moisture barrier in lieu of controlling the foundation grade moisture when approved by the Engineer.

H. Place concrete in continuous horizontal layers, approximately 20 inches thick. To avoid obtaining a plane of separation or a cold joint between layers, vibrate the concrete.

I. Vibrate concrete to avoid honeycomb and voids, especially at construction joints, expansion joints, valleys, and ends of form sheets. Use approved pouring sequences.

J. Do not use calcium chloride or any other admixture containing chloride salts in the concrete.

K. The concrete shall be placed on stabilizing or compacted subgrade to such depth that, when it is consolidated and finished, the slab thickness required by the Drawings will be obtained at all points and surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the stabilized subgrade in a manner which will require as little re-handling as possible. Placing of the concrete shall be continuous between transverse joints, without the use of intermediate bulkheads.

L. Concrete shall be thoroughly consolidated against and along the faces of all forms, and along the full length and on both sides of all joint assemblies, by means of hand operated, vibrators. Vibrators shall not be permitted to come in contact with joint assembly, the subgrade, or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

M. Coloring of concrete shall be done by dry-mixing the compound and broadcasting over the fresh-poured concrete after it has been struck off.

N. Placing of concrete shall be so regulated that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.

O. All concrete for walls shall be placed through openings in the form spaced at frequent intervals or through tremies (heavy duct canvas, rubber, etc.), equipped with suitable hopper heads. Tremies shall be of variable lengths so the free fall shall not exceed five (5) feet and a sufficient number shall be placed in the form to ensure the concrete is kept level at all times.

P. When forms are removed, surfaces shall be even and dense, free from aggregate pockets or honeycomb. To achieve this, concrete shall be consolidated using mechanical vibration, supplemented by forking and spading by hand in the corners and angle of forms and along form surfaces while the concrete is plastic under the vibratory action. Consolidation shall conform to ACI 309.

Q. Care shall be taken to prevent cold joints when placing concrete in any portion of the work. The concrete placing rate shall be such as to ensure that each layer is placed while the previous layer is soft or plastic, so that the two layers can be made monolithic by penetration of the vibrators. Maximum thickness of concrete layers shall be 18 inches. The surface of the concrete shall be level whenever a run of concrete is stopped.

R. Placement in Wall Forms: Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of

canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing, and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in forms shall not exceed 5 feet of vertical rise per hour.

3.0.4. FORMWORK

A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The Contractor shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed and replaced at the Contractor 's expense. All design, construction, maintenance, preparation, and removal of forms shall be in accordance with the FBC, ACI 347 and the requirements specified herein.

B. All forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete.

C. Vertical Surfaces: All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for by the Engineer.

D. Construction Joints: Concrete construction joints will not be permitted at locations other than those shown or specified, except as may be acceptable to the Engineer. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete.

E. Form Ties: Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spilling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1 inch back from the formed face or faces of the concrete.

F. Careful procedures for the removal of forms shall be strictly followed, and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. Members which must support their own weight shall

not have their forms removed until they have attained at least 75 percent of the 28-day strength of the concrete as specified herein. Forms for all vertical walls and columns shall remain in place at least 2 days after the concrete has been placed. Forms for all parts of the Work not specifically mentioned herein shall remain in place for periods of time as determined by the City or their designee.

3.0.5. REINFORCING STEEL

A. Reinforcing steel shall be accurately formed to the dimensions and shapes shown on the Drawings, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings.

B. Bending or Straightening: Reinforcement shall not be straightened or rebent in a manner which will injure the material. Bars with kinks or bends not shown shall not be used. All bars shall be bent cold, unless otherwise permitted by the Engineer. No bars partially embedded in concrete shall be field-bent except as shown or specifically permitted by the Engineer.

C. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used, in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. All concrete blocks used to support reinforcing steel shall be tied to the steel with wire ties which are embedded in the blocks. For concrete over formwork, the Contractor shall furnish concrete, metal, plastic, or other acceptable bar chairs and spacers.

D. The portions of all accessories in contact with the formwork shall be made of concrete, plastic, or steel coated with a 1/8-inch minimum thickness of plastic which extends at least 1/2 inch from the concrete surface. Plastic shall be gray in color.

E. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

F. Bars additional to those shown which may be found necessary or desirable by the Contractor for the purpose of securing reinforcement in position shall be provided by the Contractor at its own expense.

G. Reinforcement placing tolerances shall be within the limits specified in ACI 318, unless otherwise directed by the Engineer.

H. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters having gray, plastic-coated standard type legs as specified herein. Slab bolsters shall be spaced not less than 30 inches on centers, shall extend continuously

across the entire width of the reinforcing mat, and shall support the reinforcing mat in the plane shown.

I. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3 feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into place in the freshly placed concrete shall not be used.

J. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the City or their designee.

K. Lap length for reinforcement bars shall be in a Class B Splice in accordance with ACI 318, unless otherwise shown. Laps of welded wire fabric shall be in accordance with the ACI 318.

L. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.

M. The surfaces of all reinforcing steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is a delay in depositing concrete, reinforcing shall be reinspected and, if necessary, recleaned.

3.0.6. PREPARATION OF SURFACES FOR CONCRETING

A. General: No concrete shall be placed until the reinforcement steel and formwork have been erected in a manner acceptable to the City or their designee. The Contractor shall notify the City or their designee not less than two working days prior to concrete placement, allowing for inspection and any corrective measures which are required. Earth surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the old concrete has been stopped or interrupted so that, as determined by the City or their designee, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bond. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by sandblasting, followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

C. Existing concrete surfaces upon or against which concrete is to be placed shall be given a roughened surface for good bond. Joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accomplished by Thydroblasting. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

D. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work, provided that construction joints shall be made only where acceptable to the City or their designee.

E. Embedded Items: No concrete shall be placed until all formwork, installation of parts to - be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the City or their designee at least 4 hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.

F. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the City or their designee before any concrete is placed. Accuracy of placement is the responsibility of the City or their designee.

G. Casting Against Old Concrete: Where concrete is to be cast against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro-blasting (exposing aggregate) prior to the application of an epoxy bonding agent. Application shall be according to the bonding agent manufacturer's instructions and recommendations.

H. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited under water nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete.

I. Openings for pipes, inserts for pipe hangers and brackets, and the setting of anchors shall, where practicable, be provided for during the placing of concrete.

J. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items, and any part of the concrete reinforcement will not be permitted.

K. Cleaning: The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.0.7. TAMPING AND VIBRATING

A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense homogeneous mass, filling all comers and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement. Vibrators shall be high speed power vibrators (8,000 or 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required.

B. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified with 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.0.8. FINISHING CONCRETE SURFACE

A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions shown on the Drawings are defined as tolerances and are specified herein. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.

B. Formed Surfaces: After removal of forms, the finishes described below shall be applied in accordance with Article 3.13, D. Unless the finish schedule specifies otherwise, all surfaces shall receive at least a Type I finish. The Engineer shall be the sole judge of acceptability of all concrete finish work.

1. Type I - Rough: All fins, burrs and other projections left by the forms shall be removed. All holes left by removal of ends of ties, and all other holes, depressions, or voids shall be filled solid with cement grout after first being thoroughly wetted. Honeycombs shall be chipped back to solid concrete as directed, prior to patching with cement grout. Holes shall be filled with a small tool that will permit packing the hole solidly with cement grout. Cement grout shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of cement grout shall match

the adjacent wall surface. At locations where concrete coatings are specified to be applied, epoxy-based patch material or filler surfaces compatible with the coating shall be used in lieu of cement grout specified herein. Concrete finish shall be in strict conformance to the coating / paint manufacturer's recommendations.

2. Type II - Grout Cleaned: Where this finish is required, it shall be applied after completion of Type I finish. After the concrete has been predampened, slurry consisting of one part cement (including an appropriate quantity of white cement in order to produce a color matching the surrounding concrete) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface with clean burlap pads or sponge rubber floats. Any surplus shall be removed by scraping and then rubbing with clean burlap. The finish shall be kept damp for at least 36 hours after application.

3. Type III - Smooth Rubbed: Where this finish is required, it shall be applied after the completion of the Type I finish. No rubbing shall be done before the concrete is thoroughly hardened and the mortar used for patching is firmly set. A smooth, uniform surface shall be obtained by wetting the surface and rubbing it with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities requires it, the general surface of the concrete shall not be cut into. Corners and edges shall be slightly rounded by the use of the carborundum stone. Brush finishing or painting with grout or neat cement will not be permitted.

C. Unformed Surfaces: The finishes described below shall be applied to unformed surfaces such as floors, slabs, flow channels and top of walls in accordance with Article 3.05 - Concrete Finish Schedule. The Engineer shall be the sole judge of acceptability of all such finish work.

1. Type "A" - Screeded: This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. When a Type "F" finish is subsequently to be applied, the surface of the screeded concrete shall be roughened with a concrete rake to ½" minimum deep grooves prior to final set.

2. Type "B" - Wood Floated: This finish shall be obtained after completion of a Type "A" finish by working a previously screeded surface with a wood float until the desired texture is reached. Floating shall begin when the water sheen has disappeared and when the concrete has sufficiently hardened so that a person's foot leaves only a slight imprint. If wet spots occur, water shall be removed with a squeegee. Care shall be taken to prevent the formation of laitance and excess water on the finished surface. The finished surface shall be true, even, and free from blemishes and other irregularities.

3. Type "C" - Cork Floated: This finish shall be similar to Type "B" but slightly smoother than that obtained with a wood float. It shall be obtained by power or band floating with cork floats.

4. Type "D" - Steel Troweled: This finish shall be obtained after completion of a Type "B" finish. When the concrete has hardened sufficiently to prevent excess fine material from working to the surface, the surface shall be compacted and smoothed with not less than two thorough and complete steel troweling operations. In areas, which are to receive a floor covering such as tile, resilient flooring, or carpeting, only one troweling operation is required. The finish shall be brought to a smooth, dense surface, free from defects and blemishes.

5. Type "E" - Broom or Belt: This finish shall provide the surface with a transverse scored texture by drawing a broom or burlap belt across the surface immediately after completion of a Type "B" finish.

6. Type "F" - Swept in Grout Topping: This finish shall be applied after a completion of a Type "A" finish. The concrete surface shall be properly cleaned, washed, and coated with a mixture of water and Portland Cement. Cement grout in accordance with Section 03315 shall then be plowed and swept into neat conformance with the blades or arms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention shall be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the Contractor shall notify the Engineer and the equipment manufacturer of the details of the operation and obtain approval and recommendations of the equipment manufacturer.

7. Type "G" - Hardened Finish: Either a liquid hardened finish or an aggregate hardened finish shall be provided at the Contractor's option.

8. Type "H" - Non-Slip Finish: This finish shall be provided by applying a non-slip shake-on aggregate concurrently with the application of a Type "D" finish. Application procedure shall be in accordance with manufacturer's instructions.

9. Type "J" - Raked Finish: This finish shall be provided by raking the surface as soon as the condition of the concrete permits by making depressions of +/-1/4-inch.

3.0.9. CONCRETE FINISH SCHEDULE

ITEM	TYPE OF FINISH
Inner face of walls of tanks, flow channels, wet wells, perimeter walls, and miscellaneous structures to be coated	I
Exterior concrete walls below grade	I
Exterior exposed concrete walls and columns (including top of wall) to one foot below grade. All other exposed concrete surfaces not specified elsewhere	II

All interior exposed concrete vertical surfaces in buildings	III
Interior exposed ceiling, including beams	III
Floors of process equipment tanks or basins, and slabs to receive roofing material or waterproof membranes	B
All interior finish floors of buildings and structures and walking surfaces which will be continuously or intermittently wet	C
All interior finish floors of buildings and structures which are not continuously or intermittently wet	D
Floors to receive tile, resilient flooring, or carpeting	D
Concrete in flow channels not specified to be coated	D
Exterior concrete sidewalks, steps, ramps, decks, slabs on grade and landings exposed to weather	E
Floors of process tanks indicated on Drawings or in the specifications to receive cement grout topping	F
Precast concrete form panels, hollow core planks, double tees	J

3.0.10. CURING AND DAMP PROOFING

A. All concrete shall be cured for not less than 14 days after placing, in accordance with the methods specified herein for the different parts of the work and described in detail in the following paragraphs.

SURFACE TO BE CURED OR DAMPPROOFED	METHOD
Unstripped forms	1
Construction joints between footings and walls, and between floor slab and columns	2
Encasement concrete and thrust blocks	3
All concrete surfaces not specifically provided elsewhere in this paragraph	4

B. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removed. If steel forms are used, the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 14 days of placing the concrete, curing shall be continued in accordance with Method 4.

C. Method 2: The surface shall be covered With burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.

D. Method 3: The surface shall be covered with moist earth not less than 4 hours, nor more than 24 hours, after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 days after placement of concrete.

E. Method 4: The surface shall be sprayed with a liquid curing compound. It shall be applied in accordance with the manufacturers printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film which will seal thoroughly.

F. Care shall be exercised to avoid damage to the seal during the curing period. Should the seal be damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.

G. Wherever curing compound may have been applied by mistake to faces against which concrete subsequently is to be placed and to which it is to adhere, said compound shall be entirely removed by hydroblasting just prior to the placing of new concrete.

H. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on uniformed surfaces, and within 2 hours after removal of forms from contact with formed surfaces. Repairs required to be made to formed surfaces shall be made within the said 2-hour period; provided, however, that any such repairs which cannot be made within the said 2-hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sand blasted to remove the curing compound, following which repairs shall be made as provided herein.

3.0.11. TESTING

A. Field Testing of Concrete

1. The Contractor shall coordinate with the Engineer's project representative the on-site scheduling of the materials testing consultant personnel as required for concrete testing.

2. Concrete for testing shall be supplied by the Contractor at no additional cost to the Owner, and the Contractor shall provide assistance to the materials testing consultant in obtaining samples. The Contractor shall dispose of and clean up all excess material.

B. Consistency

1. The consistency of the concrete will be checked by the materials testing consultant by standard slump cone tests. The Contractor shall make any necessary adjustments in the mix as the Engineer and/or the materials testing consultant may

direct and shall upon written order suspend all placing operations in the event the consistency does not meet the intent of the specifications. No payment shall be made for any delays, material, or labor costs due to such eventualities.

2. Slump tests shall be made in accordance with ASTM C143. Slump tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. Concrete with a specified nominal slump shall be placed having a slump within 1" (higher or lower) of the specified slump. Concrete with a specified maximum slump shall be placed having a slump less than the specified slump.

C. Unit Weight

1. Samples of freshly mixed concrete shall be tested for unit weight by the materials testing consultant in accordance with ASTM C138.

2. Unit weight tests will be performed as deemed necessary by the Engineer and each time compressive strength samples are taken.

D. Air Content

1. Samples of freshly mixed concrete will be tested for entrained air content by the materials testing consultant in accordance with ASTM C231.

2. Air content tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.

3. In the event test results are outside the limits specified, additional testing shall occur. Admixture quantity adjustments shall be made immediately upon discovery of incorrect air entrainment.

E. Compressive Strength

1. Samples of freshly mixed concrete will be taken by the materials testing consultant and tested for compressive strength in accordance with ASTM C172, C31 and C39, except as modified herein.

2. In general, one sampling shall be taken for each placement, with a minimum of one (1) sampling for each day of concrete placement operations, or for each one fifty (50) cubic yards of concrete, or for each 5,000 square feet of surface area for slabs or walls, whichever is greater.

3. Each sampling shall consist of at least five (5) 6x12 cylinders or eight (8) 4x8 cylinders. Each cylinder shall be identified by a tag, which shall be hooked or wired to the side of the container. The materials testing consultant will fill out the required

information on the tag, and the Contractor shall satisfy himself that such information shown is correct.

4. The Contractor shall be required to furnish labor to the Owner for assisting in preparing test cylinders for testing. The Contractor shall provide approved curing boxes for storage of cylinders on site. The insulated curing box shall be of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished, and maintained by the Contractor. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by ASTM C31. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds and such that all specimens are shielded from direct sunlight and/or radiant heating sources. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours.

5. The Contractor shall be responsible for maintaining the temperatures of the curing box during the initial curing of test specimens with the temperature preserved between 60°F and 80°F as measured by a maximum-minimum thermometer. The Contractor shall maintain a written record of curing box temperatures for each day curing box contains test specimens. Temperature shall be recorded a minimum of three times a day with one recording at the start of the workday and one recording at the end of the workday.

6. When transported, the cylinders shall not be thrown, dropped, allowed to roll, or be damaged in any way.

7. Compression tests shall be performed in accordance with ASTM C39. For 6x12 cylinders, two test cylinders will be tested at seven days and two at 28 days. For 4x8 cylinders, three test cylinders will be tested at seven days, three at 28 days. The remaining cylinders will be held to verify test results, if needed.

F. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 214, ACI 318, and ACI 350.

2. The strength level of concrete will be considered satisfactory if all of the following conditions are satisfied.

   a. Every arithmetic average of any three consecutive strength tests equals or exceeds the minimum specified 28-day compressive strength for the mix (see Article 2.08). b. No individual compressive strength test results falls below the minimum specified strength by more than 500 psi.

3. In the event any of the conditions listed above are not met, the mix proportions shall be corrected for the next concrete placing operation.

4. In the event that condition 2B is not met, additional tests in accordance with Article 3.10, paragraph H shall be performed.

5. When a ratio between 7-day and 28-day strengths has been established by these tests, the 7-day strengths shall subsequently be taken as a preliminary indication of the 28-day strengths. Should the 7-day test strength from any sampling be more than 10% below the established minimum strength, the Contractor shall:

   a. Immediately provide additional periods of curing in the affected area from which the deficient test cylinders were taken.

   b. Maintain or add temporary structural support as required.

   c. Correct the mix for the next concrete placement operation, if required to remedy the situation.

6. All concrete which fails to meet the ACI requirements and these specifications is subject to removal and replacement at no additional cost to the Owner.

G. When non-compliant concrete is identified, test reports shall be sent immediately to the Engineer for review.

H. Additional Tests

1. When ordered by the Engineer, additional tests on in-place concrete shall be provided and paid for by the Contractor.

2. In the event the 28-day test cylinders fail to meet the minimum strength requirements as outlined in Article 3.10, paragraph F, the Contractor shall have concrete core specimens obtained and tested from the affected area immediately.

   a. Three cores shall be taken for each sample in which the strength requirements were not met.

   b. The drilled cores shall be obtained and tested in conformance with ASTM C42. The tests shall be conducted by a materials testing consultant approved by the Engineer.

   c. The location from which each core is taken shall be approved by the Engineer. Each core specimen shall be located, when possible, so its axis is perpendicular to the concrete surface and not near formed joints or obvious edges of a unit of deposit.

d. The core specimens shall be taken, if possible, so no reinforcing steel is within the confines of the core.

e. The diameter of core specimens should be at least 3 times the maximum nominal size of the coarse aggregate used in the concrete but must be at least 2-inches in diameter.

f. The length of specimen, when capped, shall be at least twice the diameter of the specimen.

g. The core specimens shall be taken to the laboratory and when transported, shall not be thrown, dropped, allowed to roll, or damaged in any way.

h. Two (2) copies of test results shall be mailed directly to the Engineer. The concrete in question will be considered acceptable if the average compressive strength of a minimum of three test core specimens taken from a given area equal or exceed 85% of the specified 28-day strength and if the lowest core strength is greater than 75% of the specified 28-day strength.

I. In the event that concrete placed by the Contractor is suspected of not having proper air content, the Contractor shall engage a materials testing consultant approved by the Engineer, to obtain and test samples for air content in accordance with ASTM Specification C457. D

END OF SECTION

03360 GROUT

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work included in this Section consists of grouting the various items listed hereinafter and indicated on the drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

1.0.3. SUBMITTALS

A. Manufacturer's literature shall be submitted for review on the following items.

1. Nonshrink grout data shall include grout properties, mixing, surface preparation and installation instructions.

1.0.4. DELIVERY AND STORAGE

A. Grouting materials shall be delivered and stored in unbroken containers with seals and labels intact as packaged by the manufacturer.

1.0.5. QUALITY ASSURANCE

A. If the project includes patching, through bolt holes, epoxy anchors, and/or block outs, the manufacturer shall, if necessary, train the Contractor's employees in the mixing and curing of the epoxy grouts for each of these applications.

B. Furnish one year warranty. Manufacturer's warranty shall not contain a disclaimer limiting responsibility to the purchase price of products or materials.

PART 2 – PRODUCTS

3.0.1. MATERIALS

A. Cementitious grout shall be composed of one part of Type II Portland cement to three parts of sand.

B. Non-shrink Nonmetallic Grout shall be Five Star Special Grout 150, Five Star Products, Inc.; Grout F-100, Sauereisen Cement; Masterflow 713, BASF Building Systems; NS Grout, Euclid Chemical Company, pre-mixed type, or approved equal.

C. Non-shrink Metallic Grout: Master Builders Embeco 636 Plus Grout, BASF Building Systems, pre-mixed type, or approved equal.

D. Non-shrink Hydraulic Cement Grout shall be Waterplug, Thoro Products, BASF Building Systems, or approved equal.

E. Non-shrink shall be Five Star HP Epoxy Grout, Five Star Products, Inc., available from Coastal Construction Products, Inc. or Wall-Nu Trowelable, Steelcote Manufacturing Co., available from Florida Wire and Rigging Works, or approved equal.

F. Specifications for cement and sand for mortar and grout shall be the same as those for concrete.

3.0.2. EPOXY ANCHOR GROUT

A. Epoxy anchor grout shall conform to ASTM C 881 - Epoxy-Resin-Base Bonding Systems for Concrete, Type IV, Class A, B and C, Grade 3 with the exception of gel time.

B. Heat deflection temperature per ASTM D 648 -- Test Method for Deflection Temperature of Plastics Under Flexural Load shall be a minimum 120 degrees.

C. Manufacturer shall certify that the epoxy anchor grout will maintain 90 percent of its strength up to a temperature of 125 degrees F.

D. Grout shall come in a 2 chambered cartridge with a metering system that provides the proper ratio of hardener and resin. The grout shall also come with a static mixer nozzle to thoroughly mix the hardener and resin together.

E. Epoxy anchor grout shall be capable of being used in submersed applications once cured.

F. Compressive strength per ASTM D 695 - Test Method for Compressive Properties of Rigid Plastics shall be 10,000 psi minimum.

G. If the average working or operating temperature will be over 100 degrees F or in a high fire risk area, use cement based non-shrink grout and oversized holes.

H. Overhead anchors and anchors in fire-resistive construction shall be cast-in anchors.

I. Embedment of adhesive anchors/rebar shall be deep enough to develop the anchor/rebar. Embedment shall not exceed 67 percent of the member depth.

J. Epoxy anchor grout shall be SET-XP by Simpson Strong-Tie Co., Inc.; Powers PE1000+ by Powers Fasteners, Inc.; RE 500 SD by Hilti, Inc.; or approved equal.

PART 3 – EXECUTION

3.0.1. PREPARATION

A. All bonding surfaces shall be clean and dust and oil free. Grout shall be mixed and applied in accordance with manufacturer's recommendations.

B. Grout Mix proportions (for grout to fill cores in reinforced masonry walls): 1. One part Portland cement, Type I or II. 2. 2-1/4 parts damp, loose sand. 3. Parts shot gravel (3/8" maximum). 4. Mix to conform to ASTM C476-83 with a minimum compressive strength of 2500 psi at 28 days, have an 8" minimum and 10" maximum slump.

C. Grout shall not be placed until base concrete or masonry has attained its design strength, unless authorized otherwise by the Engineer. Surfaces that will be in contact with grout shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete, and other deleterious materials.

D. Mechanical, electrical, and finish WORK shall be completed prior to placement of topping or concrete/grout fill. To ensure bonding to the base slab, the base slab shall be given an exposed aggregate finish. Alternatively where accepted by the Engineer, the base slab shall be given a roughened textured surface by a close-spaced rake while the surface is green. After curing, high pressure washing shall expose the aggregates and produce not less than a 3/16-inch amplitude roughness. Jackhammers or chipping hammers shall not be used.

3.0.2. INSTALLATION

A. Non shrink Grout:

1. Non shrink, nonmetallic grout shall be used for grouting precast concrete wall panel connections, column base plates, anchor bolts, reinforcing bars, pipe sleeves, and machinery supports.

2. Grout shall be mixed as close to the work area as possible and transported quickly to its final position in a manner which will not permit segregation of materials.

3. Non shrink grout shall be cured with water saturated burlap for at least three days or with an application of Super Rez Seal cure and seal compound applied immediately after grout placement.

4. Machinery set on grout pads shall not be operated until the grout has cured for at least 24 hours.

5. Expansive, non-shrink epoxy grout in the category of the DP Five Star Epoxy Grout shall be used for installation of vibrating machinery such as pumps.

B. Epoxy Adhesive Anchors: Grout shall be proportioned and mixed with automatic equipment. Unless otherwise indicated, embedment shall be sufficient to develop the

ultimate tensile strength of the anchor or reinforcing bar per the manufacturer's ICC-ES report but shall not be less than 8 diameters for threaded rod or 12 diameters for reinforcing or smooth bars. Holes shall be dry.

C. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, and cleaned. Drilled anchors shall not be installed until the concrete has reached the required 28 Day compressive strength. Anchors shall not be loaded until the grout has reached its indicated strength in accordance with the manufacturer's instructions.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The work under this section includes the design, casting, delivery, erection and shoring of precast prestressed concrete structures as shown on the Contract Drawings.

1.0.2. RELATED WORK

A. Section 03300 “Cast-in-Place Concrete, Reinforcement and Formwork”.

B. Section 01340 “Shop Drawings”.

1.0.3. REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Without limiting the generality of other requirements of these specifications all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section:

1. South Florida Building Code, latest edition.

2. ACI 318, Building Code Requirements for Reinforced Concrete.

3. PCI MNL 116, Manual for Quality Control for Plants and Production of Precast Concrete Products.

4. ASTM A416, Specification for Uncoated Seven-Wire Stress-Relieved Steel Strand for Prestressed Concrete.

1.0.4. QUALITY ASSURANCE

A. Fabricator shall be a recognized prestressed concrete manufacturer with minimum five (5) years’ experience in the manufacture and erection of similar units and whose design, fabrication and erection operations are supervised by a Florida Registered Professional Engineer.

1.0.5. CONTRACTOR SUBMITTALS

A. Shop Drawings: The Contractor shall submit shop and erection drawings for approval, showing concrete design strength; unit dimensions; unit weights; size, number, location and stress in prestressing strands; size, number and location of reinforcing bars including reinforcing for erection and handling stresses; concrete cover over

reinforcing and strands; bearing and anchorage details; concrete finish; curing method; erection marks; hoist points and shoring points.

B. Design Calculations: The Contractor shall submit for approval, neat, legible and complete design calculations prior to fabrication. Calculations shall be by a Florida Registered Professional Engineer whose seal shall appear on calculation sheets and shop drawings.

1. Calculations shall include predicted in-place cambers without superimposed loads, with superimposed dead loads and with superimposed dead loads and live loads.

2. Span length in calculations shall be from center of bearing to center of bearing.

3. Include bearing and anchorage details including those in the precast sections and those in the job cast concrete structure.

C. Certificates: The Contractor shall submit manufacturer's test certificates on prestressing strands and reinforcing.

D. Concrete Cylinder Tests: The Contractor shall submit copies of cylinder break reports by an approved commercial test laboratory, made from each casting for this project to verify that concrete has attained minimum ultimate prestressed transfer strength specified.

1.0.6. DEFINITIONS

A. In these specifications, where the terms "Precast Concrete" and "Precast Concrete Specialties" are used, they shall have equivalent meaning.

PART 2 – PRODUCTS

2.0.1. MATERIALS

A. Concrete: Minimum 7 day ultimate compressive strength 4000 of psi. Higher strength will be permitted to suit manufacturer's design. In other respects, concrete shall comply with requirements of Section 03300 “Cast-in-Place Concrete, Reinforcing and Formwork”.

B. Prestressing Strands: High strength 7 wire strand conforming with ASTM A416-94. Elongation test conforming with ASTM A270-90 with minimum elongation at rupture of 3.5% in 24 inches. Tests need not be made if certification of conformance with specifications is provided by manufacturer. Use strand of U.S. manufacture.

C. Reinforcing Steel: ASTM A615, grade 60.

D. Forms: Provide smooth units true to size, shape and detail with flat panes, sharp lines and arises, free from warp, twist, bow or similar distortions, spalling, broken edges,

cracks or similar defects. Dimensional tolerances to be as provided in ACI 525 Standards Minimum Requirements for Thin Section Precast Concrete Construction.

2.0.2. FABRICATION

A. General: Fabricate units accordance with approved shop drawings and approved design calculations

B. Unit design and fabrication: Conform with ACI Standard Building Code Requirements for Reinforced Concrete and the Prestressed Concrete Institute Standards. Fabricator shall design joists and beams in accordance with loads indicated on drawings. Camber under dead load or deflection under total load shall not exceed 1/360 of span.

C. Inserts: Install hanger inserts and sleeves in unit forms for mechanical and electrical items as provided under other sections and as shown on drawings.

D. Curing: Top surface to receive water curing only.

E. Marking: Distinctively mark each unit with manufacturer's name and mark indicated on erection drawings.

F. Age: Units shall be minimum 10 days old before shipping or erection.

2.0.3. PREFORMED JOINT SEALANT

A. The joint sealing compound shall be Quik-Seal, a preformed, cold applied, ready to use plastic joint sealing compound as supplied by Quikset Utility Vaults, Santa Ana, California; Ram-Nick by K.T. Snyder Company; or approved equal.

2.0.4. MORTAR

A. Mortar used between the sections of precast concrete vaults shall be as recommended by the manufacturer.

2.0.5. NON-SHRINK GROUT

A. Non-shrink grout shall be as specified in the Section 03360 "Grout".

2.0.6. QUALITY CONTROL

A. Precast concrete units shall be made by an experienced manufacturer and shall be constructed as shown on the drawings and specified herein and shall be free of defects, checks and cracks. Care shall be taken in the mixing of materials, casting, curing and shipping to avoid any of the above.

B. The Contractor shall notify the City a minimum of 5 days before the units are cast and 5 days before shipment is made, in order to provide for plant inspection, if the City so directs.

PART 3 – EXECUTION

3.0.1. ERECTION

A. Erection to be by manufacturer and supervised by manufacturer's Florida Registered Professional Engineer or authorized representative. Handle and install units with precision, in conformance with drawings, details and erection drawings.

3.0.2. INSTALLATION

A. Required pads, plates and reinforcing bars shall be furnished for casting and anchorage in the adjoining work. The precast concrete units shall be installed in a workmanlike manner with the units tight and at right angles to the supporting beams or walls. The units shall be aligned and leveled in accordance with the procedures recommended by the manufacturer. Units shall be grouted by a mixture of not less than one part cement to three parts fine sand, care being taken to see that joints are filled. Damp grout that may have seeped through shall be removed before it hardens.

B. All openings in the precast units shall be made by the Contractor and are the responsibility of the Contractor. Where details for an opening are not shown on the drawings, the opening shall be made in accordance with the recommendation of the manufacturer. When an opening causes a loss in carrying capacity of the unit, the adjacent units shall be designed to carry the additional dead and superimposed load transferred from the unit with the opening. The Contractor shall provide saddle headers as required.

C. Extreme care shall be used to avoid damaging or soiling concrete as no repairing or cutting will be permitted. Damaged units shall be replaced at the expense of the Contractor. Wooden hammers shall be used, with pinch bars being used on unexposed parts only.

3.0.3. CLEANING AND REPAIRS

A. Cleaning: Clean exposed surfaces of units of stains to a uniform appearance. Do not use caustic or acid cleaners.

B. Repairs: Repair nicks or chips in exposed areas.

END OF SECTION

DIVISION 5 – METALS

05520 ALUMINUM RAILING

PART 1 - GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall design, furnish, fabricate, and install aluminum railing and appurtenances as indicated on the Drawings, complete, all in accordance with the requirements of this section.

1.0.2. QUALITY ASSURANCE

Standards: Unless otherwise specified, all materials, workmanship and practices shall conform to the following Standards:

A. South Florida Building Code, latest edition.

B. Aluminum Construction Manual, latest edition, by the Aluminum Association.

C. Applicable OSHA requirements

D. Rail and fittings shall be clear anodized, as specified below. Railing shall be plastic wrapped for protection. Wrap shall be removed only after erection.

1.0.3. SUBMITTALS

A. The Contractor shall submit to the Engineer of Record detailed shop drawings, prior to fabrication, for review and approval. The drawings shall be complete, covering all aluminum railing members, fastenings, connections, means of galvanic protection, etc., which for part of a finished structure.

B. Where written certification are called for below, it shall be submitted to the Engineer of Record.

PART 2 – PRODUCTS

2.0.1. ACCEPTABLE MANUFACTURING

A. Wesrail: Moultrie Manufacturing Co.

B. Thompson Railing Systems: Thompson Fabricating Co.

C. Approved equals.

2.0.2. ALUMINUM RAILING SYSTEM

A. General: Where indicated on the Drawings, pipe handrailing shall be provided. Pipe handrailing shall be supplied as required by the South Florida Building Code and OSHA whether indicated on the Drawings or not, including stair railings.

B. Prior to fabrication, verify all dimensions by actual measurement, so that the finished ladder will fit accurately and provide a neat appearance, with no part out of line and grade by more than 1/8 inch.

C. Handrailing system, including rails, stanchions and attachments, shall be designed and constructed to resist a load of not less than 200 pounds applied in any direction and at any point on the rails.

D. The handrailing shall be of welded construction design, with field splices where required between sections. All exposed welds shall be continuous fillets, watertight, and ground smooth. Bends, warps and ramps in the rails shall be made by bending the pipe to true and even curves, without kinks.

E. Vertical pipe supports to be set in concrete shall be set in built-in pipe sleeves, or concrete may be cored, minimum 5-inches in length. Removable posts shall be sleeved. The joint between upright and sleeve shall be cemented with epoxy grout.

F. Wall brackets for handrail shall be as manufactured by Mouitrie Manufacturing Company, J.G. Braun Company, Fulton Metal Products Company, or equal. Wall brackets shall be fabricated of metal compatible with handrail metal. End all wall mounted railings at the line of the first nosing.

G. Provide chain gates across all openings in railings. Chain shall be welded, stainless steel, close link hoisting chain, 1/4-inch by 1-5/16 inch links. One end of each chain gate shall be attached by a stainless steel shackle to a 1/4-inch round stainless steel stock eye bolted to the pipe stanchion and the other end connected to a heavy stainless steel snap hook. A 1/4-inch stainless steel eye shall be provided in the opposite stanchion or concrete wall, installed at the height of the center lines of the top rail.

H. Aluminum Railing: Stanchions and rails shall be nominal 2 inch diameter minimum, Schedule 80 aluminum alloy 6061-T6 with clear anodized finish. Railing posts must be adequately reinforced to meet the specified design loads. Handrailing shall be 42 inches in height. In no case shall the spacing of handrail posts exceed five (5) feet on center. Stainless steel railings may be used in lieu of aluminum railing at the CONTRACTOR's option.

I. Kickplates: Kickplates where not specifically called for in the Drawings shall be furnished and installed typically at the edges of all metal walkways and at other handrail installations. Kickplates shall be l/4-inch thick, must meet OSHA requirements, shall project 4-inches above walkway surface, may not infringe on minimum required walkway width and material must be the same as that of handrail construction. Kickplates shall be connected to handrail posts as detailed on the drawings.

2.0.3. FINISHES

A. Finish shall be natural anodized after forming, and before assembly. Each piece of aluminum to be anodized shall be finished (anodized) in accordance with the following Aluminum Association Designations:

1. Sheet: AA-M10C11c21A31, with minimum 0.4 mil coating

2. Structural shapes, plates, bars and pipe: AA-M10C11C21A41, with minimum 0.8 mil coating.

B. All fabricated aluminum items of the railing shall be anodized after fabrication. No touch-up paint will be accepted.

C. A written certification stating compliance with the aluminum finish (anodizing) as specified above shall be furnished for all aluminum material and/or items furnished and installed by the Contractor.

D. Protect all aluminum by a factory applied coating of water-tight clear methacrylate lacquer having a minimum thickness of 0.008"minimum capable of withstanding the action of lime and mortar for a period of at least one week in an atmosphere of 100% relative humidity at 100ºF.; the action of 10% by weight muriatic acid for a period of six hours at 70ºF.; and the action of the atmospheric weather for a period of 12 months. The coating shall be sprayed on, after anodizing and sealing procedures have been followed. Submit written certification indicating that the coating meets or exceeds the requirements of the Aluminum Association Mortar Test for Clear Lacquers on Anodized Aluminum.

2.0.4. EXPANSION BOLTS

A. Stainless steel type 316 wedge bolts furnished by handrail manufacturer.

PART 3 -- EXECUTION

3.0.1. EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.0.2. PREPARATION

A. Clean and strip primed items to bare metals where site welding is required.

B. Supply items required to be cast into concrete with setting templates, to appropriate sections.

3.0.3. FABRICATION

A. Fabricate railings in shop, made and erected square, plumb, straight and true, designed for adjustment to field variations, accurately fitted with tight joints and intersections.

3.0.4. INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors and plates required for connecting railings to structure.

C. Aluminum Railings: Aluminum railing fabrication shall be performed by craftsmen experienced in the fabrication of architectural metal work. Exposed surfaces shall be free from defects or other surface blemishes. Dimensions and conditions shall be verified in the field. All joints, junctions, miters and butting sections shall be precision fitted with no gaps occurring between sections, and with all surfaces flush and aligned. Electrolysis protection of materials shall be provided.

D. After satisfactory installation, all coating shall be removed leaving the clean undamaged surface. In locations where aluminum may come in contact with dissimilar metals or masonry, the surfaces shall be given a heavy brush coat of alkali-resistant bituminous paint or separated with a non-absorptive tape or gasket.

3.0.5. EXPANSION BOLTS

A. Expansion bolts shall be spaced 10d apart and 5d edge distance for no reduction in pull out strength. A safety factor of four shall be provided on expansion bolt pull out values published by the manufacturer.

3.0.6. ALUMINUM SURFACES

A. Aluminum surfaces in contact with concrete, grout (except epoxy grout), dissimilar metals (except stainless steel), or buried in the ground shall be protected with a heavy coat of Bitumastic No. 300, as manufactured by Kop-Coat, Inc., or approved equal.

END OF SECTION

05550 CASTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section specifies castings for use in this project, including water and force main valve boxes and covers. It also establishes casting requirements, including tolerances, on all castings to be furnished and installed under this project.

1.0.2. REFERENCES

A. Materials used in the manufacture of the castings shall conform to ASTM A48 "Gray Iron Castings," for Class 30B iron. Castings shall be non-rocking. Manhole and valve box covers shall have a roadway type surface and machined mating surface.

B. Proof Loading: AASHTO M306 Loading.

1.0.3. QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing of products specified in this section with minimum five years documented experience. Non-domestic castings shall conform with all marking and other requirements contained in federal and state statutes.

PART 2 – PRODUCTS

2.0.1. GENERAL

A. Shop drawings shall be furnished for all castings supplied and said drawings shall include certified dimensions and weights of all components. Dimensions shall conform with City Standard Detail requirements.

B. Finish casting dimensions shall be held to the following tolerances: Up to 4 inches, ±1/32 inch; 4 to 8 inches, ±3/64 inch; 8 to 12 inches, ±1/16 inch; 12 to 24 inches ±1/8 inch; above 24 inches, add the appropriate (minimum) value from those given above to ±1/8 inch. Note that this shall not affect the requirement that mating surfaces shall be machined and shall bear for their full length. Components shall be interchangeable with new and existing units without exceeding the tolerance add up specified above.

C. Weight of castings supplied shall not vary more than ±5 percent from the certified weight supplied by the Contractor as a part of his shop drawings.

D. The foundry's name (and if not domestically produced, foundry's name and country) shall be cast in the bottom of each lid. Body and lid or frame and cover shall be manufactured by the same foundry. Manufacture of the various components comprising one set, such as for example; a valve box and lid, by different manufacturers is expressly forbidden.

E. Note that name cast into the bottom of the lid shall be the name of the actual foundry doing the casting. Name of an importing, purchasing or fabricating (from components) firm will not be acceptable. Methods of attaching this information other than casting are not acceptable.

F. With the shop drawings of each component, submit the name, address and county of the foundry producing the component. Further, this foundry shall not be changed during the course of the Contract without written previous notification of and written permission from the City Engineer, Engineering Division, Opa-Locka Public Works Department.

G. Each shipment of castings provided by the Contractor shall be accompanied by a certification specifically stating that the materials of that shipment comply with all requirements of this Specification, specifically including dimensions and tolerances, materials of manufacture, weights of components, marking and foundry of origin. This certification shall be signed, dated and sealed by a registered professional engineer licensed to practice in the state where the materials are cast or if not of domestic manufacture in the state where the supplying firm is located.

H. Contractor's should be aware that it is the intent of the City to periodically check materials supplied for conformance to these specifications to include materials testing, dimensions and tolerances, component weights, marking, finish and fit, and such other matters as are necessary to assure supply of products meeting our requirements. Random testing of materials supplied will be at City expense if passed. Any retesting due to material not passing tests will be at the supplier's expense.

2.0.2. CASTINGS AND MATERIAL – GENERAL

A. General materials used in the manufacture of the castings shall conform to ASTM Standard A48, "Gray Iron Castings", latest edition, for Class 30B iron. Valve box covers shall have a roadway type surface, machined mating surface and shall be non-rocking.

B. Castings shall be furnished unpainted with shotblasted finish.

C. Castings shall be as manufactured by U.S. Foundry 7630 ring and FD cover, or approved equal.

D. Valve boxes and valve box covers:

1. For Water Facilities:

a. Cast iron boxes shall be extension type with slide-type adjustment and flared base. The minimum thickness of metal shall be 3/16 inch. The word “W" shall be in the cover. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location. Boxes to be No. 3 for 6” and larger lines.

2. For Sewer Facilities:

a. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

b. The letter “S” shall be cast in the cover for sewer force mains.

c. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

d. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

e. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

f. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

g. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL INSTALLATION

A. Castings with cracks or other defects, shall not be installed in the work.

B. The use of sloped asphaltic concrete ramp rings will not be permitted.

C. The Contractor shall provide all barricades, signs and flashing warning lights necessary to warn pedestrians and motorists of the construction along the entire route of the project.

D. Frames and covers or valve boxes and covers shall be set accurately to grade to conform to the finished grade of the adjacent areas.

E. Castings level without tipping, to correct elevations.

F. It shall be the Contractor's responsibility to assure that castings are set to match existing and/or proposed finish paving grades.

END OF SECTION

DIVISION 10 – SPECIALTY CONSTRUCTION

10001 STORMSAFE VAULT TREATMENT STRUCTURE

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

J. The Contractor shall furnish and install StormSafe Model SSV40-2-000 structure, inner components and filter cartridges as shown on the Drawings, and as specified herein.

K. This section includes minimum construction requirements for the StormSafe Vault installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

L. Manufacturer: FABCO Industries Inc.

1.0.2. RELATED SECTIONS

A. Section 02230 “Clearing and Grubbing”.

B. Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. Cover/slab: 26,100 lb (13 tons)

B. Base w/ filters: 83,500 lb (42 tons)

2.0.2. MATERIALS MEET OR EXCEEDS REQUIREMENTS

A. Vault:
- Reinforcement steel: rebar, ASTM A-615 grade 602.
- Cement: ASTM C-150 specifications,
- Concrete 28 day compressive strength shall be 5000 psi (min)

B. Access manholes: ASTM A-48, class 35B gray iron or ASTM A536, grade 80-55-06 ductile iron.

2.0.3. PERFORMANCE CHARACTERISTICS (W/ FABCO HYDROCARBON CARTRIDGE)

A. Maximum cartridge capacity = 40
B. Maximum treatment capacity = 10.0 cfs (4,500 gpm)
C. Bypass capacity 24.0 cfs (10,800 gpm)

PART 3 – EXECUTION

3.0.7. INTALLATION OFF-LOADING, SETTING, EXCAVATION, DEWATERING, DRAINAGE, AND BACK FILL OPERATIONS

Shall be performed in accordance manufacturer requirements local regulations and are the responsibility of the contractor. Sub-base and backfill depth are site specific and shall be specified in the technical specifications or by the engineer of record.

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3.0.8. GENERAL INSTALLATION

A. The contractor shall verify That the unit is vertically and horizontally plumb and stable, with minimum voids and minimum un-compacted soil after back fill operation.

B. Connect and seal drain lines to the StormSafe inlet and outlet ports and, if necessary, grout with approved non-shrinking grout-fill in accordance with grout manufacturers' instructions. All grout-fill materials shall be supplied by the contractor. The StormSafe "inlet" and "outlet" ports are clearly labeled with black paint. Inlet and outlet drain lines are to be aligned flush with respect to the interior vault walls.

3.0.9. MAINTENANCE

A. Maintenance and cartridge filter replacement instructions are provided separately by FABCO and are typically site specific.

B. Cartridge filter replacement (in general) for best performance, replace cartridge filters IAW FABCO recommendations. High contaminant locations may require more frequent cartridge replacement. Remove any debris or heavy sediment from the influent and effluent chambers. Enter the StormSafe cartridge chamber in accordance with state and local regulations for enclosed space entry. Remove each cartridge by rotating 30 degrees in the clockwise direction and lifting. Likewise, install the new cartridge and lock in place by rotating 30 degrees in the counterclockwise direction. Disposal of used filter cartridges per local regulations.

END OF SECTION

10001 STORMSACK PLUS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install StormSack Plus Model PSS1626-1E-000 structure, inner components and filters cartridges as shown on the Drawings, and as specified herein.

B. This section includes minimum construction requirements for the StormSack Plus installation. It also stablishes maintenance requirements and all related work called for by the Contract Drawings and/or specifications, or reasonably inferable from either or both, as needed for a complete and proper installation..

C. Manufacturer: FABCO Industries Inc.

PART 2 – PRODUCTS

2.0.1. WEIGHT ESTIMATE

A. TOTAL WEIGHT, EMPTY: 20 LBS (EST)

2.0.2. MATERIALS

A. Vault:
- Frame: Aluminum alloy, 5000 SERIES
- StormSack: Geotextile
- Hardware: Stainless Steel

2.0.3. PERFORMANCE CHARACTERISTICS

A. Capacity: 0.9 CU. FT

B. Filtered Flowrate: 635 GPM (1.4 CFS)

C. Protected bypass flowrate 940 GPM (2.1 CFS)

2.0.4. CLEAR OPENING RANGE:

A. Minimum size 15" X 25"

B. Maximum size: 17" X 27"

PART 3 – EXECUTION

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3.0.1. GENERAL INSTALLATION

A. The Carefully remove the storm grate, measure catch basin frame clear opening, and adjust flanges to rest on grate support ledge. Install StormSack and verify each flange is secure and the unit is snug with little movement in the drain. Install corner fillers using provided double-sided tape. Tuck rubber splash guard within drop flanges to direct flow into the unit. Trim if necessary. Reinstall the storm grate directly on the StormSack adjustable support flanges.

B. Recommended minimum vault depth 2" below StormSack

C. Replacement StormSack P/N: PSS1626-1E-200

D. Replacement oil boom P/N: PSS1626-1E-720

END OF SECTION

DIVISION 15 – MECHANICAL

15000 BASIC MECHANICAL REQUIREMENTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The drawings and specifications shall be considered as complementary, one to the other, so that materials and work indicated, called for, or implied by the one and not by the other shall be supplied and installed as though specifically called for by both. The drawings are to be considered diagrammatic, not necessarily showing in detail or to scale all of the equipment or minor items. In the event of discrepancies between the drawings and the specifications, or between either of these and any regulations or ordinances governing mechanical work, the Contractor shall notify the Engineer of Record in ample time to permit revisions.

1.0.2. SITE INVESTIGATION

A. It shall be the responsibility of the Contractor to visit the site of the work and become familiar with all available information regarding the location of existing facilities. Failure of the Contractor to fully inform himself of all existing conditions will not be cause for additional compensation.

1.0.3. NEW EQUIPMENT AND MATERIALS

A. All equipment and materials used in this installation shall be new, of the best quality and, unless otherwise noted, shall be standard catalog items of the various manufacturers.

1.0.4. STANDARDS

A. The codes and standards covering mechanical work include, but are not limited to:

1. American National Standards Institute (ANSI)
2. American Society for Testing Materials (ASTM)
3. American Society of Mechanical Engineers (ASME)
4. American Welding Society (AWS)
5. National Fire Protection Association (NFPA)
6. National Electrical Manufacturers Association (NEMA)

7. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

8. National Sanitation Foundation (NSF)

9. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

10. South Florida Building Code (SFBC)

11. Codes, Regulations, Ordinances, etc., of the State, County, and/or Municipality, in which the construction is located, and any political division having jurisdiction over this work.

1.0.5. CUTTING AND PATCHING

A. All cutting and patching necessary for the work shall be performed by the Contractor. Where interferences occur, and departures from indicated arrangements are required, the Contractor shall coordinate the mechanical work with the other trades involved and make a determination as to changed locations and elevations of the piping and shall obtain approval from the Engineer of Record and the City for the proposed changes.

1.0.6. SAFETY REQUIEREMENTS

A. In addition to the components specified and shown on the drawings and necessary for the specified performance, the Contractor shall incorporate in the design and show on the shop drawings all the safety features required by the current codes and regulations, including but not limited to those of the Occupational Safety and Health Act of 1970, and Amendments thereto.

1.0.7. METAL FASTENER

A. Unless otherwise indicated, metal fasteners and related parts shall be of aluminum or American made stainless steel and shall be of adequate strength for the purpose intended.

1.0.8. PREVENTION OF ELECTROLYSIS

A. Where the contact of dissimilar metals may cause electrolysis and where aluminum will contact concrete, mortar or plaster, the contact surface of the metals shall be separated using not less than one coat of zinc chromate primer and one heavy coat of aluminum pigmented asphalt paint on each surface; or where deemed necessary by the Engineer of Record, not less than one course of asphalt saturated cotton fabric cemented to both metals with flashing cement, shall be used. Finished works shall be cleaned and excess cement removed.

1.0.9. FACTORY TEST

A. When equipment is required to be factory tested, the results of the tests shall be submitted to the Engineer of Record and the City and approval of the test results shall be obtained before shipment of the equipment.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15001 WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These specifications shall govern the design, materials and installation requirements of the City of Opa-Locka for construction of potable water mains pipes and fittings including water services, valves and other appurtenances.

B. The use of 10-inch, 14- inch or 18-inch pipe, fittings or valves, is not permitted except as may be approved for connections to existing mains.

C. This section does not purport to cover all materials or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

D. The City intent is to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The material and installation for this project shall be in full compliance with all applicable City Standards and any other applicable standards listed by the City. Instructions from the City's designated representative in the field shall be followed by the Contractor.

1.0.3. PROJECT APPROVAL

A. Potable water mains shall follow the City's Public Works Engineering Manual. Mains shall be constructed in accordance to the City's Standard Details, cleaned, tested, and disinfected under the supervision of the City designated Construction Manager, in accordance with Section 1990 "Cleaning and Testing of Mains" and Section 1995 "Disinfection of Water Mains".

B. In addition, systems shall be designed in accordance with the requirements of the Miami-Dade County Department of Regulatory and Economic Resources (RER) Division of Environmental Resource Management (DERM), City's Fire Department, Florida Department of Health, and the City's Public Works Engineering Manual.

1. Installed pipe shall be designed to be mechanically restrained to the design pressure. Lengths of restrained pipe shall be identified on the plans.

1.0.4. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required.

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.5. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 “Special Project Requirements”.

1.0.6. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 “Shop Drawings”.

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.7. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.1. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

   1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe for this project shall be restrained joint pipe Class 51, as manufactured by U.S. Pipe or American Pipe (or approved equal) in accordance with ANSI standard A21.51 working pressure not less than 250 pounds per square inch. The inside lining of the pipe shall be cement mortar as per ANSI Standard A21.4 and AWWA C 104. The outside coating shall be an asphaltic coating approximately one mil thick as specified in AWWA C151. All pipe and fittings shall be poly-wrapped conforming to the requirements of ANSI Standard A21.5 and shall have an 8-mil minimum thickness. For all 6-inch diameter DIP, use class 52.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.2. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

2.0.3. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.4. CONCRETE, MORTAR AND GROUT

A. See Section 03300 “Cast-in Place Concrete, Reinforcing and Formwork”.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15110 “Butterfly Valves”.

C. See Section 15115 “Check Valves”.

D. See Section 15120 “Gate Valves”.

E. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with the City of Opa-Locka Public Works Manual or FDOT.

C. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any water or fire mains, the City shall perform an onsite inspection in order to verify the following:

a. Size of pipe

b. Materials onsite

B. If this inspection does not occur or parts are missing, the shutdown will be canceled.

C. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

D. Timing of all shutdowns will depend on affected stakeholders and shall be coordinated through the City of Opa-Locka Public Works Department.

E. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events

C. Set-up and Verification: The Contractor’s Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

D. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

E. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

F. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. The Contractor shall follow the sequence of construction as indicated in Section 01120 "Sequence of Construction".

G. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

H. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The

Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

I. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

J. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

K. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3" wide blue detector tape for water main. The words "CAUTION WATER LINE BURIED BELOW" on the upper side of the pipe shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all water mains and services or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County standard details.

E. Ductile Iron Pipes shall be laid with minimum vertical cover of 36 inches below finished grade, on City and FDOT roads. The minimum vertical cover over Ductile Iron pipes on Miami-Dade County roads shall be 48 inches. For vertical cover less than 30 inches below finish grade use concrete slab as per City's Standard Detail. For vertical cover between 30 inches and 36 inches below finish grade use ductile iron pipe class 53.

F. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

G. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

H. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

I. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

J. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

K. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

L. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

M. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

N. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

O. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

P. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

Q. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

R. Flanged joints shall be used only where indicated on the plans. Before making up flanged joints in the pipeline, the back of each flange under the bolt heads and the face of each flange shall have all lumps, blisters and excess bituminous coating removed and shall be wire brushed and wiped clean and dry. Flange faces shall be kept clean and dry when making up the joint, and the workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Bolts and nuts shall be tightened by opposites in order to keep flange faces square with each other, and to ensure that bolt stresses are evenly distributed.

S. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the City, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

T. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

U. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all

bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

V. Water main connection shall not be made to the City's main unless water in the trench at the connection point is at least 6" below the bottom of the pipe. When work is not in progress, open end of pipes, fittings, and valves shall be securely closed with polywrap or Filter Fabric so that no trench water, earth, or other substance will enter the pipes or fittings. Where any part of the coating or lining is damaged, the Contractor shall repair the damaged coating or lining in a satisfactory manner at his expense. Pipe ends left for future connections shall be valved, plugged or capped, and properly restrained.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department. Tapping sleeve glands shall be tested and pass a pressure test of 150 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

Y. Only the Public Works Department is authorized to shut-off water service within the City.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground DI pipe fittings 30 inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

JOINT	RESTRAINT (or approved equal)
Push-On DIP	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DIP Pipe	EBAA Iron Series 1100 Megalug

D. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

E. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, in accordance with the standard details.

3.0.5. CLEANING, TESTING AND DISINFECTION

A. See Sections 02505 "Cleaning and Testing of Mains" and 15995 "Disinfection of Water Mains".

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of 24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. Water lines shall not be laid in the same trench with sewer lines, storm sewer, gas lines, fuel lines, or electric cables. The horizontal and vertical separation shall be in accordance with the Department of Health (HRS) latest revision.

B. The existing water main network shall be analyzed during the design to determine which mains can be abandoned and taken out of service during the construction of water mains. Mains to be abandoned shall be left in place and are to be cut, filled with grout and capped to the nearest valve.

C. The cost of tests including water usage and retesting due to failures shall be at the Contractor's expense.

D. For As-Built Drawings information, refer to Section 01725 "As-Builts Drawings".

END OF SECTION

15002 FORCE MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. These Specifications shall govern the materials and installation requirements of the City of Opa-Locka for force mains constructed in its service area. All pipe fittings and appurtenances intended for conveying or transmitting fluids under pressure shall conform to the requirements for force main materials contained in the City of Opa-Locka Public Works Manual.

B. This Specification does not purport to cover all material or installation procedures which may be required, whether by the nature of the proposed work, or by the City, or by other regulatory agencies.

C. It is intent of the City to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

1.0.2. QUALITY ASSURANCE

A. All material and installation shall be in accordance with the City's Design and Construction Standard Specifications and Details.

B. The Contractor shall provide all required Certifications.

1.0.3. PERMITS, INSPECTIONS AND FEES

A. The Contractor shall obtain and pay for all permits, official inspections and all other official fees, in connection with the work.

B. Inspection by the City personnel is required in addition to, not in lieu of, County department inspections (if any).

C. No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

1.0.4. PRECONSTRUCTION CONFERENCE

A. Prior to commencement of the work, the Contractor shall attend a Preconstruction Meeting in accordance with Section 01100 "Special Project Requirements".

1.0.5. SUBMITTALS

A. The contractor shall submit all shop drawings in accordance with Section 01340 "Shop Drawings".

B. The Contractor shall furnish "As-Builts" in accordance to Section 01720 “Project Record Documents”.

C. The contractor shall submit operating and maintenance instructions and all other submittals in accordance with Section 01730 “Operating and Maintenance Instructions”.

D. Where the specifications require test certification or certification that certain products or material furnished are as specified, the contractor shall deliver such certification to the City. No material or equipment shall be approved for use in the work until individual certification has been received.

E. Final as-builts shall be submitted to the City at the time of final pressure testing and disinfection.

1.0.6. SAFETY REQUIREMENTS

A. See Section 01016 “Safety Requirements, Hurricanes Preparedness and Protection of Property”.

B. Contractor shall avoid any tampering with active City facilities, such as operating valves on active mains. Any work on active mains shall be coordinated with the appropriate City personnel.

PART 2 – PRODUCTS

2.0.4. PIPE MATERIAL

A. All material for use in the project shall be new and of recent manufacturing and shall be the products of reliable manufactures or suppliers who, otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five years. And that comply with the City standards & specifications, permitted plans and shall use any or all of the following materials:

1. Ductile Iron Pipe in accordance with Section 15060 “Piping and Fittings” can be used at any locations and from sizes 4” to 54”.

B. Ductile Iron Pipe (D.I.P.) for this pipe shall have a pressure class rating of 150 P.S.I. The interior of ductile iron pipes and fittings shall be poly-lined in accordance with AWWA/ANSI Standard C104/A21.4 or Protecto 401 Ceramic Epoxy with a minimum dry film thickness (DFT) of 40 mils. Either alternative shall require shop drawings approval prior to construction. Cement mortar lining is NOT acceptable for force mains. The outside coating of the pipe shall be asphaltic, approximately one (1) mil thick, as specified in AWWA C151, latest revision. The polyethelene wrap for ductile iron pipe encasement, shall conform to the requirement of ANSI Standard A21.5 and shall be manufactured from virgin polyethelene material. The lining shall have an eight (8) mil minimum thickness. Wrapping tape shall be of the same material.

C. DIP. rubber gaskets and lubricant shall conform to the applicable requirements of ANSI Standard A21.11

D. On areas where there is information that indicates presence of contamination, pipe material shall be Ductile Iron and in accordance with Sections 15060 “Piping and Fittings” and 01560 “Temporary Environmental Controls”.

2.0.3. CASTINGS

A. Unless otherwise indicated, all materials, workmanship and practices shall be in accordance with the current edition of the ASTM A48, "Gray Iron Castings", Class 35B. Proof Loading: AASHTO M306 Loading.

B. Castings shall be in compliance with Section 05550 “Castings”.

C. Valve Boxes and Covers for Sewer Facilities

1. Valve boxes shall be made from Class 30B gray iron in accordance with ASTM A48.

2. The letter “S” shall be cast in the cover for sewer force mains.

3. Bottom of cover and seat of frame shall be machined to provide a uniform contact surface.

4. The boxes shall be of such length as will be adapted, without full extension, to the depth of cover required over the pipe at the valve location.

5. All service valve boxes shall be No. 52, and all Main valve boxes shall be No. 53 regardless of the size.

6. No. 52 valve boxes shall be U.S. Foundry 7605 ring and FB cover, or approved equal.

7. No. 53 valve boxes shall be U.S. Foundry 7635 ring and FJ cover, or approved equal.

2.0.4. BRICK

A. Concrete brick shall conform to ASTM Standard C55 "Concrete Building Brick". Clay brick may be substituted for concrete brick. Clay brick shall conform to ASTM Standard C62, "Building Brick (Solid Masonry Units Made from Clay or Shale)".

B. Bricks shall have true edges and sharp corners and shall have been cured for at least 14 days before being placed.

2.0.5. VALVES

A. See Section 15100 “Valves General”.

B. See Section 15125 “Plug Valves”.

C. See Section 15130 “Miscellaneous Valves”.

PART 3 – EXECUTION

3.0.1. CONSTRUCTION METHODS

A. Permits: The Contractor shall obtain all required right-of-way, City Building Department, and regulatory permits prior to commencing any work.

B. Maintenance of traffic (MOT) shall be provided by the Contractor in accordance with Section 1 of the City of Opa-Locka Public Works Manual or FDOT.

C. Flow Control: Flow control shall be exercised as required to ensure that no flowing sewage comes into contact with sections of the manhole or sewer pipe under construction.

D. Pre-Shutdown Inspections

1. The following requirements apply to shutdowns for all non-emergency work. These requirements may be waived at the sole discretion of the City of Opa-Locka Public Works Department for emergency work.

2. Shutdowns must be scheduled with the City one (1) week in advance.

3. Prior to the shutdown for tie in of any sewer mains, the City shall perform an on-site inspection in order to verify the following:

   a. Size of pipe

   b. Materials on-site

4. If this inspection does not occur or parts are missing, the shutdown will be canceled.

5. City shall be provided with a minimum of 48 hours notice for pre-shutdown inspection.

6. All shutdowns shall occur at night. 7. The City can, at any time, cancel scheduled shutdowns due to inclement weather events and/or special events.

D. Flow management during construction will be done by the City with flow diversion towards the 42-inch force main on the discharge side of Pump Station 28. Please refer to Section 01120 “Sequence of Construction”.

E. Set-up and Verification: The Contractor's Florida Licensed Professional Surveyor and Mapper is required to recover the design baseline and verify the elevations and coordinates on a regular basis as needed.

F. The Contractor is required to have a level instrument setup next to the construction site in order to control the vertical alignment of the pipe installation prior to trench backfilling. The level shall be setup daily for use by the surveyor, Contractor's foreman and City Engineer/Inspector. Any underground construction work that does not have a level properly setup will be stopped by the City Engineer/Inspector.

G. The Contractor is required to have a survey crew record the field information on a daily basis when there is underground pipe installation. The survey crew shall be on-site as needed to record and verify the information before it is covered. Any underground construction work that does not have the information recorded by a survey crew will be stopped by the City Engineer/Inspector. The Engineer/Inspector has the authority to order re-excavation of work that was covered without accurate survey measurements.

H. The ends of existing mains shall be temporarily capped or plugged and anchored to keep them clean and the joints from blowing apart from internal pressure until the new main can be connected to them. Refer to Section 01120 "Sequence of Construction" for additional information.

I. Where existing paving is damaged or removed by the Contractor, temporary paving as specified in Section 02745 "Pavement Removal and Replacement" shall be placed the same day as the ditch backfill and it shall be replaced with permanent paving, where shown on the plans, within thirty (30) days or in accordance with the local governing agency having jurisdiction.

J. In addition to specific construction methods specified elsewhere, the following general requirements shall apply to the work under this project.

    1. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the City. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

    2. Any work within the pipe and fittings shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired, or the pipe section or fitting replaced as required by the City. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

3. The Contractor's attention is called to the fact that connections to existing mains will probably involve the removal of a concrete anchor and cast iron plug; also, that the existing mains may be cast iron with poured lead Sulphur compound, or rubber gasket type joints, concrete with flanged outlet connections, or others. The Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these existing mains.

4. Where required by the City and at his discretion, the Contractor shall eliminate dust annoyance to adjacent property owners by sprinkling its work area with water or by other approved means.

K. When mains are to be installed within existing street areas, the Contractor shall limit the amount of ditch open at any one time to one block (approximately 600 feet). The work in each block, including excavation, pipe laying, backfilling and temporary paving shall be completed before proceeding with the work in the next block.

L. Boring and jacking operations and trenches remaining open to facilitate the repair of existing underground utilities damaged by the Contractor during excavation shall not be deemed a portion of the allowable 600 feet of open trench, unless otherwise decided by the City at its discretion.

M. When mains are to be installed within existing street areas, the Contractor may employ more than one installation crew on the project but not less than 1200 feet shall separate any two open trench sections as defined hereinbefore.

3.0.2. INSTALLATION

A. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

B. The centerline of the pipe shall not vary by more than two inches from the location shown on the plans and the top of the pipe shall not vary by more than two inches from the established grade, except at points where this tolerance must be changed to clear obstructions or make connections. Deviation from this location will be permitted only upon approval from the City.

C. Detector Tape: All pipes shall have 3-inch-wide metal green detector tape for force mains. The words “CAUTION FORCE MAIN BURIED BELOW” on the upper side of the pipe shall be printed at 30-inch intervals along the tape. Tape shall be placed 18 inches below grade above all force mains or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

D. Bedding and initial backfill shall be in accordance with approved Miami-Dade County Standard Detail.

E. DI pipe shall be laid with minimum vertical cover of 48 inches.

F. Vertical cover 36 inches to 48 inches below finish grade may be approved on a case-by case basis by the City of Opa-Locka Public Works Department.

G. For vertical cover 30 inches to 36 inches below finish grade, use ductile iron pipe Class 53.

H. For vertical cover less than 30 inches below finish grade, use concrete slab as per Standard Detail 16-7; use of this Standard Detail requires written approval from the City of Opa-Locka Public Works Department.

I. Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belt slings, or other authorized equipment. Under no circumstances shall any of the water-line materials be dropped or dumped into the trench. All pipe, fittings and accessories shall be encased in Polyethylene tubing (8mil) thick.

J. Care shall be taken to avoid abrasions of the pipe coating. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Defects in coating are to be field repaired.

K. The full length of each section of pipe shall rest solidly upon the completed pipe bed, with recesses excavated and shaped to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and re-laid.

L. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, up to the level of the outside bottom of the proposed pipe barrel, recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of the pipe.

M. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe. Any pipe found defective shall be immediately removed and replaced with sound pipe.

N. Lines shall be laid straight and depth of cover shall be maintained as shown on the plans. Grades or pipe centerline elevations are shown on the plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken every one hundred feet (100') or portion thereof and deviation along the pipeline.

O. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be properly protected.

P. Gaskets shall be properly stored, and care shall be exercised to keep them away from heat, light, oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands. Gaskets shall be installed just prior to installation of pipe.

Q. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the City prior to installation.

R. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying; and for lines on an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

S. Push-on, restrained push-on and mechanical joints in ductile iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with AWWA Standard C600, "Installation of Ductile Iron Water Mains and Their Appurtenances", except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection, or one-half of the allowable deflection specified in AWWA C600, whichever is the lesser amount.

T. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

U. Cutting of ductile iron pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

V. The pipe shall be restrained at reaction points as specified and shown on the plans. The pipe manufacturer shall instruct the Contractor in the making of such joints. In addition, mechanical restraint per Section 3.0.3. at minimum shall be placed at all bends, tees, plugs and other fittings. Encasement-type thrust anchors and collars shall be placed where indicated on the plans.

W. City oversees connection between the old and new pipes and all wet taps on existing piping. ALL TAPS MUST BE WITNESSED BY THE CITY. Size-on-size taps are not allowed unless approved in writing by the City of Opa-Locka Public Works Department.

Tapping sleeve glands shall be tested and pass a pressure test of 100 psi for two (2) hours before the pipe is tapped.

X. CITY TO OPERATE ALL EXISTING VALVES. VALVES BETWEEN EXISTING AND NEW WORK SHALL BE OPERATED BY CITY PERSONNEL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR'S PERSONNEL OPERATE ANY SUCH GATE OR VALVE.

3.0.3. RESTRAINING

A. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

B. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

C. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

D. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

E. Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

F. Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

3.0.4. SETTING OF VALVES AND BOXES

A. Install where shown or specified, and set plumb. Valve boxes shall be centered on the valves and set plumb at finish grade. Boxes shall be installed over each gate valve unless otherwise shown.

B. Where feasible, valves shall be located outside the area of roads and parking. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet.

C. There shall be a valve at all branches tees and crosses except fire hydrants and fire lines. Valve shall have the top of the operating nut located at maximum of 12" below the finished grade.

D. Valve boxes shall have a 12"x12"x8" reinforced concrete slab surrounding it, on paved areas at grade, and in swale areas 4" below grade for placement of sod over the slab, as per the City's Standard Details.

3.0.5. CLEANING, TESTING

A. Force mains shall be cleaned and flushed prior to pressure testing, with sufficient pressure to displace all test water and to remove sand, mud, or other deposits. If necessary, other approved methods must be used to ensure the removal of all such deposits. Water used shall be metered and paid for by the Contractor.

B. Mains shall be tested as a whole or in sections between line valves, unless otherwise specified or approved by the City. Unless otherwise approved by the City, the total length of pipe for any single test shall not exceed 2,000 feet.

C. The complete force main system shall be pressure tested. The pressure test shall be for two (2) hours at 100 psi minimum test pressure in accordance with AWWA C600. No more than five (5) psi drop over the duration of the test. Final approval will be based on leakage test results. The maximum allowable leakage shall be determined by following AWWA formula:

$$L = \frac{SD \text{ times the square root of } P}{148{,}000}$$

where: D = Pipe diameter in inches
S = Length of lines in lineal feet
P = Average test pressure in psi
L = Allowable leakage for system in gallons per hour

The pressure test shall be witnessed by a representative of the City of Opa-Locka Public Works Department and the Engineer of Record or his representative.

3.0.6. PAVEMENT RESTORATION

A. See Section 02745 "Pavement Removal and Replacement".

3.0.7. SYSTEM IDENTIFICATION

A. Buried pipes shall be color coded with a blue paint as stated in the Florida Administration Code, Subparagraph 62-555.320(21)(B)3 and as required by the Florida Department of Environmental Protection. If paint is applied during installation of the pipe, the paint shall be applied in a continuous line that runs parallel to the axis pipe and that is located on the top of the pipe. For pipes with an internal diameter of

24-inches or greater, paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

3.0.8. SPECIAL CONSIDERATIONS

A. As Built Drawings information, refer to Section 01725 “As-Builts Drawings”.

B. Force Mains:

1. All force main shall require profile drawing to show high and low elevation of the piping. Top of pipe shall be shown at each 100 ft. intervals, and finish grade.

2. Conflict manholes involving other utilities mains are to be avoided.

3. Design criteria evaluation for Air Release Valves will be required for vertical elevation changes of more than two (2) pipe diameter.

END OF SECTION

15005 PVC C900 WATER MAIN

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section includes materials, installation, and testing of PVC C900 for water main, conforming to AWWA C900. Size range is 4 through 16 inches.

B. Not for use near gas stations or other sites which may have hydrocarbon contamination.

C. PVC DR 18 (4 to 16-inches color blue) will be allowed for water mains due to current supply chain disruptions. The WASD will accept water main projects with PVC DR 18 for one year to 9/30/2023. Plans approved after 9-30-2023 will require DIP to be used for potable water mains.

D. All PVC pipe used shall be of new or recent manufacturer. Pipe with surface discoloration will not be allowed.

E. Pipe Fittings shall be ductile iron.

1.0.2. RELATED WORK

A. Section 33 01 10.54 (02505) “Cleaning and Testing of Mains”

B. Section 33 01 10.58 (UC-175) “Disinfection of Water Mains”

C. Section 33 14 00 (15060) “Piping and fittings”

D. Section 33 14 13 (UC-000) “Water Mains”

1.0.3. SUBMITTALS

A. Submit shop drawings in accordance with the City specifications or submit the Pre-Approved Product List Manufacturer.

B. PVC Pipe not on the Pre-Approved Products list shall supply the following:

1. Provide affidavit of compliance with AWWA C900.

2. Submit fully dimensioned cross-section of the bell and barrel of the pipe. Show the bell maximum outside diameter in the pressurized area and its minimum wall thickness at the same location.

3. Submit copies of the following manufacturer-required tests conducted on project pipe: a. Quick-burst strength of pipe and couplings. b. Flattening resistance of pipe. c. Record of additional tests after test sample failure.

4. Submit manufacturer's literature of gray iron and ductile-iron fittings including dimensions, thickness, weight, coating, lining, and a statement of inspection and compliance with the acceptance tests of AWWA C110 or C153. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of AWWA C153 fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in AWWA C153 is met.

5. Submit outline drawings and materials description of service connection saddles, corporation stops, and pipe plugs.

6. Submit test results for the restrained joint system to be used certified by an independent test laboratory demonstrating compliance with these specifications for each size and pressure rating.

1.0.4. QUALITY CONTROL

A. No deflection at the pipe joints is allowed for PVC pressure mains.

B. Bending of the Pipe Barrel: Gasketed PVC pies can be laid to the line of a curved trench by bending the pipe barrel into a curved shape. The procedure is as follows:

1. Keep the spigot in straight alignment with the bell.

2. Place compacted backfill around the assembled joint. This backfill restrict movement while the curvature is being made.

3. Place compacted backfill at the inside of the curve at the mid-point of the pipe length to form a fulcrum.

4. Using only manual effort, move the leading bell of the pipe length to be curved.

5. Longitudinal barrel deflection along the pipe barrel shall be based on half of the allowable longitudinal deflection established by the PVC Pipe Association Handbook of PVC Pipe Design and Construction Table 8.4. The allowable pipe barrel deflection in inches shown below is per 20-foot pipe length.

Pipe Size (inch)	4	6	8	10	12
Allowable Bending Offset at the opposite end of the R18 PVC 20-foot pipe length, inches	12	8.5	6.5	5	4

C. PVC pipe shall not be over-homed.

D. Pipe Bedding Material shall be class 1 backfill material with a maximum rock size of 3/4-inches.

E. The City shall have the final determination on allowing the use of PVC C900 DR 18 for

potable water mains. The Contractor/Design Engineer shall obtain approval in writing prior to finalizing 100% construction plans.

PART 2 – PRODUCTS

2.0.1. PIPE

A. Pipe 4-inches through 16 inches shall conform to AWWA C900 DR 18, rubber-ring gasket bell end or plain end with elastomeric gasket coupling, cast iron equivalent outside diameter, material cell classification 12454 per ASTM D1784, latest revision.

B. All potable water pipe and fittings installed under this Project shall be color coded as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall blue pipe, shall have a co-extruded blue external skin, or shall be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall.

C. Pipe shall have a gasket locking system at the bell end. This does not restrain the pipe but rather locks the pipe in place and prevents the gasket from rolling.

2.0.2. FITTINGS

A. Fittings shall be cement lined, Ductile Iron and conform to AWWA C153, latest revision or AWWA C110, latest revision.

2.0.3. FLANGES

A. Flanges on outlets of fittings shall be Class 250 per ASME B16.1.

B. PVC flanges shall be of the one-piece solid socket design and shall be made of the same material as the pipe. Manufacturer's pressure rating shall be at least 250 psi at a temperature of 73°F. Minimum burst pressure shall be 500 psi. Flanges shall match the dimensions of ASME B16.5, Class 250, steel flanges for outside diameter, bolt circle, and bolt holes. Do not use Van Stone flanges.

2.0.4. OUTLETS

A. All connections to PVC require a saddle.

2.0.5. RESTRAINED JOINTS

A. Provide external restrained joints as indicated in the drawings. Restrained joints shall be provided by restraining systems that incorporate a wedge restraint on the restraint ring to provide positive restraint.

B. Internal Joint Restraint: RieberLok and Field Lok type gasket restraints are allowed for PVC Pipe in pressure applications.

C. Restraint devices for bell-and-spigot joints shall consist of a split restraint ring installed

on the spigot, connected to a solid backup ring seated behind the bell.

D. Restraining Glands shall be EBAA Iron Series 2000 and 1600 or approved equal.

E. The ASTM A536 ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

F. T-bolts, studs, and connecting hardware shall be high-strength, low alloy material in accordance with AWWA C111.

G. Design restraining devices to have a 2:1 safety factor based on the design strength of the pipe..

PART 3 – EXECUTION

3.0.1. PRODUCT MARKING

A. The pipe shall be marked by the manufacturer at 5-foot intervals and each coupling to identify the nominal diameter, the outside diameter base, that is, cast-iron or steel pipe (IPS), the material code for pipe and couplings, the dimension ratio number, AWWA C900, and the seal of the testing agency that verified the suitability of the material for potable water service (NSF/ANSI 61).

3.0.2. PRODUCT MARKING

A. PVC shall be protected from UV degradation caused by extended exposure to direct sun. Pipe with surface discoloration shall not be installed and immediately removed from the project site. Tarps used to protect the pipe from sunlight shall be placed to allow for adequate ventilation to prevent heat build-up.

B. Ship, store, and place pipe at the installation site, supporting the pipe uniformly. Avoid scratching the pipe surface. Do not stack higher than 4 feet or with weight on bells. Cover to protect from sunlight.

C. Do not drag PVC pipe over the ground, drop it onto the ground, or drop objects on it.

D. Store loose pipes on racks with a maximum support spacing of 3 feet. Provide shades for pipe stored outdoors or installed outdoors until the pipe is filled with water. Store fittings indoors in their original cartons.

E. Store solvent cement indoors or, if outdoors, shade from direct sunlight exposure. Do not use solvent cements that have exceeded the shelf life marked on the storage container.

3.0.3. HANDLING PIPE

A. Hoist pipe with mechanical equipment using a cloth belt sling or a continuous fiber

rope that avoids scratching the pipe. Do not use a chain. Pipes up to 16 inches in diameter may be lowered by rolling on two ropes controlled by snubbing. Pipes up to 6 inches in diameter may be lifted by hand..

3.0.4. INSTALLING BURIED PIPING

A. Pipe Bedding material for PVC shall be well graded Class 1 backfill with a max rock size of ¾-inch compacted in 6-inch lifts. The minimum trench width shall be the pipe width plus 24-inches (12-inches on each side). Backfill material shall be No. 57 limerock with a maximum particle size of 2-inches.

B. Before installation, check pipe and fittings for cuts, scratches, gouges, buckling, kinking, or splitting on pipe ends. Remove any pipe section containing defects by cutting out the damaged section of pipe.

C. Do not install PVC pipe when the temperature is below 40°F or above 140°F. D. Do not install pipe that is gouged or scratched forming a clear depression.

D. Install in accordance with AWWA C605, and as follows.

1. When installing pipe in trenches, do not deviate more than 1 inch from line or 1/4 inch from grade. Measure for grade at the pipe invert.

2. Backfill materials in the pipe zone shall be imported sand per Section 31 23 33 (02315) “Trenching and Backfilling of Piping Systems”. Do not add successive layers unless the previous layer is compacted to 90% relative compaction per ASTM D1557.

3. Compact material placed within 12 inches of the outer surface of the pipe by hand tamping only.

4. Compact trench backfill to the specified relative compaction. Do not float pipe. Do not use high-impact hammer-type equipment except where the pipe manufacturer warrants in writing that such use will not damage the pipe.

5. Pipe installed below the water table where the homing mark is not visible shall utilize an over-insertion prevention device.

3.0.5. UNDERGROUND LOCATION

A. All PVC installed shall have the ability to be located aboveground. Tracer Wire, Magnetic Balls and Location Safety Tape (all three) are all required by the Department.

B. Install 3M compatible magnetic location ball markers every 100 feet approximately 1-foot above the PVC main on straight runs and at any bends, vertical or horizontal. See WASD Standard Detail R 5.0.

C. Install 10-gauge tracer wire taped to the buried PVC pipe. The tracer wire shall provide a continuous path which can locate the buried installation by inducing a current to the tracer wire.

D. Install electronically detectable safety tape approximately 1 to 2 feet above the top of the buried PVC pipeline as a visible marker for future excavation.

3.0.6. ASSEMBLY OF RUBBER-GASKET PIPE JOINT

A. All Lay the pipe section with the bell coupling facing the direction of laying.

B. Lubricate the spigot over the taper and up to the full insertion mark with the lubricant supplied by the pipe manufacturer. If the lubricated pipe end touches dirt, clean the pipe end and reapply lubricant.

C. Insert the spigot into the bell and force it slowly into position.

D. Check that the rubber ring has not left the groove during assembly by passing a feeler gauge around the completed joint.

3.0.7. CLEANING AND TESTING

A. All of the piping installed under this project shall be tested as follows and as directed by the Engineer.

1. With exceptions as noted below, all PVC piping installed under this Contract shall be cleaned and tested according to section 33 01 10.54 (UC-170) "Cleaning and Testing of Mains".

2. Unless otherwise specified elsewhere herein, all PVC water main shall be tested at 150 psi in accordance with ANSI/AWWA C605.

3.0.8. FIELD QUALITY CONTROL

A. All mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. Test PVC Pipe mains in accordance with ANSI/AWWA C605-once all backfill is in place and fully compacted, and after all thrust blocks, if applicable, have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the Department as a condition precedent to the approval and acceptance of the system.

3.0.9. DESINFECTION

A. Disinfect in accordance with section 33 01 10.58 (UC-175) “Disinfection of Water Mains and ANSI/AWWA C651 – Disinfecting Water Mains. During the period that the chlorine solution or slug is in the section of pipeline, open and close valves to obtain a

chlorine residual at hydrants and other pipeline appurtenances. Swab exposed faces of valves and blind flanges prior to bolting flanges in place with a 1% sodium hypochlorite solution. Disinfect isolation valves, pipe, and appurtenances per AWWA C651, Section 4.7.

B. Flush with potable water until discolored water, mud, and debris are eliminated. Swab interior of pipe and fittings with a 1% sodium hypochlorite solution. After disinfection, flush with potable water again until water is free of chlorine odor. After confirming the chlorine residual, flush the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is either within 0.5 mg/L of the replacement water or no higher than that generally prevailing in the distribution system.

C. Discharge of chlorinated water into watercourses or surface waters is regulated by the National Pollutant Discharge Elimination System (NPDES). Disposal of the chlorinated disinfection water and the flushing water is the Contractor's responsibility. Schedule the rate of flow and locations of discharges in advance to permit review and coordination with Owner and cognizant regulatory authorities. For measuring chlorine concentration, supply and use a medium range, drop count, DPD drop dilution method kit per AWWA C651, Appendix A.1. Maintain kits in good working order available for immediate test of residuals at point of sampling.

END OFSECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. Without limiting the generality of the other requirements, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available.

1. Association of State Highway Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture–Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
AASHTO M-306	Standard Specification for Drainage, Sewer, Utility, and Related Casting

2. American Society for Testing Materials (ASTM)

ASTM A48	Standard Specification for Iron Castings
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
ASTM B92	Standard Specification for Unalloyed Magnesium Ingot and Stick For Remelting
ASTM B148	Standard Specification for Aluminum-Bronze Sand Castings
ASTM B209	Standard Specification for Deformed and Plant Carbon-Steel Bars for Concrete Reinforcement
ASTM C478	Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
ASTM D4	Standard Test Method for Bitumen Content
ASTM D1784	Standard Classification System and Basis for Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds

ASTM D2584	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D2657	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings ASTM D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

3. American National Standards Institute (ANSI)

ANSI B16.1	Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250

4. American Water Works Association (AWWA)

AWWA C105 Polyethylene Encasement for Ductile Iron Pipe

AWWA C110 Ductile Iron and Gray Iron Fittings

AWWA C111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings

AWWA C115 Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges

AWWA C150 Thickness Design of Ductile Iron Pipe

AWWA C151 Ductile Iron Pipe, Centrifugally Cast

AWWA C210 Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings

AWWA C508 Swing-Check Valves for Waterworks Service, 2-In. through 24-In. (50-mm through 600-mm)

AWWA C550 Protective Interior Coatings for Valves and Hydrants

AWWA C600 Installation of Ductile Iron Water Mains and their Appurtenances

5. City of Opa-Locka Code of Ordinances

6. Florida Administrative Code (FAC)

7. Florida Building Code

8. International Organization for Standards (ISO) ISO 8179 Ductile Iron Pipes, Fittings, Accessories and their Joints – External Zinc-Based Coating

9. Miami-Dade County Code of Ordinances

10. Miami-Dade Division of Environmental Resources Management, Department of Regulatory and Economic Resources (RER-DERM) Regulations

11. Occupational Safety and Health (OSHA) Regulations

12. Society for Protective Coatings (SSPC) SSPC-PA 2 Procedure for Determining Conformance to Dry Coating Thickness Requirements

13. Ten State Standards

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

15060 PIPING AND FITTINGS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. This section describes materials, testing, and installation of ductile-iron pipe and fittings for water. The work included in this section consists of furnishing all material, equipment, craft labor and performing all operations necessary for the supply, installation, and commissioning of all piping, fittings and accessories within the limits of work, as shown on the drawings and specified herein.

B. Where references are made to other standards or codes, unless specific date references are indicated the latest edition of said standard or code shall govern.

1.0.2. WORK NOT INCLUDED UNDER THIS SECTION:

A. Piping installation for various types of piping systems is specified other sections herein that constitute the Design Standards and Construction Details. Installations specified in this section are supplementary to those sections and in the case of conflict the more stringent condition shall prevail.

1.0.3. PIPING LAYOUT AND DESIGN CRITERIA:

A. Field verify dimensions prior to preparation of layout and shop drawings. Obtain the following information from the drawings and specifications:

1. Elevation of the pipe centerline and of the completed ground.

2. Alignment of the pipeline.

3. Field test hydraulic gradient elevation (HGL).

4. Nominal internal diameter, ID.

5. Design internal pressure class or HGL.

6. Joint types.

B. Obtain shop drawing approval prior to fabrication of piping. All items not specifically mentioned in the specifications or noted on the approved plans, but which are reasonably necessary to for a complete, functional, and satisfactory installation shall be included.

1.0.4. SUBMITTALS

A. Submit shop drawings in accordance with the General Provisions.

B. Provide an affidavit of compliance with standards referenced in this specification, e.g., AWWA C151, AWWA C153, etc.

C. Submit copy of report of pressure tests for qualifying the designs of all sizes and types of pipe and fittings that are being used in the project. The pressure test shall demonstrate that the minimum safety factor described in relevant standard is met.

D. Submit piping layout profile drawings showing location and dimensions of pipe and fittings; submit after equipment and valve submittals have been reviewed and marked "Resubmittal not required." Include laying lengths of valves, meters, in-line pumps, and other equipment determining piping dimensions. Label or number each fitting or piece of pipe. Piping having identical design pressure class, laying lengths, and bell-and-spigot dimensions that is to be placed in long straight reaches of alignment may have the same identifying label or number.

E. Provide the following information:

   1. Lining thickness.

   2. Wall thickness.

   3. Material test data for this project.

   4. Show deflections at push-on and mechanical joints.

   5. Submit joint and fitting details and manufacturer’s data sheets.

F. Fully detailed drawings of all fittings proposed shall be supplied by the manufacturer with its bid. The tabulated nominal weight of each size and type of fitting shall also be supplied by the manufacturer for all items proposed. This weight shall be that of the bare casting prior to application of any lining or coating.

G. Submit calculations and test data proving that the proposed restrained joint arrangement for restrained joint pipe can transmit the required forces with a minimum safety factor of 1.5.

H. Submit copy of manufacturer's quality control check of pipe material and production. Include hydrostatic test records and acceptance test records. For each acceptance test, submit a stress-strain diagram showing yield strength, yield point, tensile strength, elongation, and reduction in area. Provide specimen test section dimensions and speed and method used to determine speed of testing, method used for rounding of test results, and reasons for replacement specimens, if any. Submit ring-bending test of pipe of the same diameter and pressure class as the pipe required for this project to prove ring-bending stress at 48 ksi results in a factor of safety of 2.0.

I. For Ductile Iron Pipe and fittings, submit certificate that cement for mortar lining complies with ASTM C150, designating type.

J. Submit test report on physical properties of rubber compound used in the gaskets.

K. Submit test reports and certifications for ceramic epoxy lining as specified herein. Submit applicators qualifications. Submit manufacturer's written recommendations for application and repair of coating.

L. Submit drawing or manufacturer's data sheet showing flange facing, including design of facing serrations.

M. Submit weld procedure specification, procedure qualification record, and welder's qualifications prior to any welding to ductile-iron pipe or fittings.

1.0.5. DELIVERY, STORAGE, AND HANDLING

A. During shipping, delivery and installation of pipe and accessories, handle in a manner that is incompliance with the manufacturer's recommendations, and employ procedures that ensure delivery of an undamaged operable product.

B. Exercise particular care not to damage coatings by limiting exposure or physical contact with other materials, objects, or the environment.

1.0.6. INSPECTION

A. The Owner's Representative will inspect materials, production, and testing of pipes, fittings, and special pieces at manufacturer's plant.

1.0.7. QUALITY ASSURANCE

A. All pipe, fittings and other materials supplied under this contract shall be subject to inspection while still on the delivery truck. It is the sole responsibility of the vendor and supplier to make prior contact with the Storekeeper or the Construction Management section and provide a minimum of 48-hours prior notice of delivery. When so notified, the City will make arrangements for inspection of the material upon arrival or within a reasonable time thereafter. Material shall not be unloaded without inspections taking place either prior to or, if necessary for examination, during the unloading procedure. The City will not be responsible for any delays or additional costs created by noncompliance with the requirement for prior notification or the requirement for thorough inspection.

B. Materials shall be delivered in complete compliance with the AWWA Standards as modified herein, without damage, and shall match or exceed the quality of any samples supplied. The City absolutely reserves the right to require samples of any material supplied and to perform whatever tests considered by the Engineer, whose decision shall be final, to be in the City's best interest on said samples. Where such tests are

of a destructive nature, the sample, if it passes the test will be paid for (at cost as shown by invoice) by the City. Samples failing will be immediately replaced with suitable material at the supplier's/Contractor's expense. Samples required prior to order as a condition for purchase or as a materials submittal for approval will be at the supplier's/Contractor's expense but, if approved and not used for destructive tests, may be used in the work with permission from the Engineer.

C. Materials found to be defective, not in strict compliance with the quality standards of samples supplied or these specifications shall be immediately returned to the vendor at his expense. If defects are discovered at a later time, the vendor shall be required to remove said items and shall bare all costs for so doing together with any replacement costs. Rejection of items may subject the vendor to liquidated and/or actual damages as specified elsewhere herein.

D. Foundries supplying materials shall maintain their metallurgical records for a minimum period of two (2) years after fabrication and firms not doing so may be found in default.

E. Foundries which provide cause for rejection include but are not limited to; incorrect metallurgy or metallurgy which cannot be verified to the complete satisfaction of the Engineer; foundry identification/location, size, pressure and material identification information lost, removed, non-existent, or not visible when assembled; not in complete compliance with all applicable ANSI/AWWA Standards as modified herein and/or these specifications; not in compliance with NSF/ANSI; not in compliance with approved shop drawings; out of roundness in excess of ANSI/AWWA requirements; dimensional differences in excess of ANSI/AWWA requirements; rough exterior coating; chipped, cracked, scratched or otherwise damaged interior or exterior coatings or linings; interior or exterior coatings which are too thin; coatings too thick to allow proper assembly; coatings too thick to allow proper grip by restraining gaskets or other restraining elements; pin holes or honey combing of pipe; weld spatter or excess metal in gasket grooves or the whole of the bell area; bell areas which are distorted or otherwise improperly cast; spigots which are out of round, not of proper dimension, or not beveled to an extent that will allow easy assembly of the pipe joint; gaskets which are defective or of the wrong material; lack of joint materials; improper or defective joint materials; bolting of the wrong material or size; electro galvanizing or other exterior plating when hot-dip galvanizing is required; incorrect, flawed or damaged interior coating or lining; lack or non-submittal of all required certifications; non-timely submission of certifications; incorrect/incomplete certifications or certifications lacking the signature, date and seal of a professional engineer when so required; flanges which are too thin, not a right angles to the pipe centerline, or otherwise distorted; together with all other flaws or defects which in the opinion of the Engineer, whose decision shall be final, adversely affect the assembly and/or function of the piping system as intended.

PART 2 – PRODUCTS

2.0.4. PIPE AND FITTINGS: DUCTILE IRON

A. GENERAL

1. As used herein, "ANSI" denotes the American National Standards Institute, "AWWA" denotes the American Water Works Association, and "ASTM" denotes the American Society for Testing and Materials.

2. All pipe and fittings to be furnished hereunder shall conform to the referenced ANSI and/or AWWA Standard as modified herein, as appearing in the following sections.

3. All markings required on pipe and fittings, shall be permanent and clearly legible and located such that they will not be hidden or destroyed when assembled into the intended system. Plainly mark each length of straight pipe and each fitting at the bell end to identify the design pressure class, the wall thickness, and the date of manufacture, and the proper location of the pipe item by reference to the layout schedule. Mark the spigot end of restrained joint pipe to show clearly the required depth of insertion into the bell.

B. DUCTILE IRON PIPE

1. For Water Mains and Sewage Mains:

a. DI pipe shall be centrifugally cast in metal molds or sand lined molds in accordance with AWWA C151 of grade 60-42-10 ductile iron. The above standard covers ductile iron pipe with nominal pipe sizes from 3 inches up to and including 64 inches in diameter.

b. The pipe thickness shall conform to standard pressure classes AWWA C151 for the following sizes. The pressure class specified is the minimum permitted.

NOMINAL PIPE DIAMETER (INCHES)	CLASS
4 thru 12	350
14 thru 24	250
30 thru 54	150

c. Depending on design conditions, the City reserves the right to require special thickness classes of DI pipe per AWWA C151 for the following sizes. Flanged (FLG) pipe shall not be less than Class 53 as identified in Table 50.15 of AWWA C150-91.

PIPE MATERIAL	NOMINAL PIPE DIAMETER (INCHES)	CLASS	TYPE OF JOINT
DI	4 thru 12	52	MJ or PO
DI	14 thru 54	51	MJ or PO

DI	All	53	FLG

C. GASKETS

1. For Water Mains:

   a. Water Mains shall use SBR gaskets for typical applications and field conditions.

   b. All gaskets for water applications shall be in full compliance with NSF/ANSI 61. Manufacturers shall maintain their NSF certification for the duration of the Contract and any extensions thereof.

2. For Sewage Mains:

   a. Sewage Mains Shall use Neoprene or EDPM gaskets for typical applications and field conditions.

3. Areas with chemical or hydrocarbon contamination shall use the gasket material as recommended by RER-DERM. All joints shall be equipped with Viton gaskets

B. FITTINGS

Fittings and Joints (Water & Force Mains)

1. Fittings shall be manufactured in accordance with AWWA C110 for nominal pipe sizes 3 inches to 64 inches, and shall be either flanged or mechanical joint. Any other fittings, not included in AWWA C110 shall conform in design and performance to the requirements of this Section.

2. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings.

3. Ductile iron pipe above grade shall be flanged.

4. Mechanical and push-on type joints shall be in accordance with AWWA C111.

5. Flanges for flanged pipe shall be in accordance with AWWA C115, shall be ductile iron, shall be manufactured in the United States, shall be rated at 250 psi maximum working pressure, and shall be similar to flange Class 125 per ANSI B16.1. Where shown on the Drawings, pipe and fittings shall be furnished with flanges similar to flange Class 250 per ANSI B16.1. Fittings shall be provided with flanges having a bolt circle and bolt pattern the same as the adjacent pipe and/or mechanical devices.

6. No raised face flanges shall be used. The raised faces shall be milled flat.

7. Flange gaskets shall be full face neoprene rubber. Gasket material (push-on) mechanical joint, gasket restrained shall be neoprene.

Restraining (Water & Force Mains)

1. Unless otherwise indicated, all below ground fittings 30-inches in diameter and greater shall be provided with manufacturer proprietary restrained joints.

2. Underground ductile iron fittings for DI pipe 24 inches in diameter and less shall be restrained mechanical joint fittings.

3. All fittings and specific pipe joints shall be restrained as outlined below (NO SUBSTITUTIONS). MEGABOND coating system shall be provided for all EBAA products.

4. All fittings and specific pipe joints shall be restrained as outlined below (or with approved equal):

JOINT	RESTRAINT (or approved equal)
Push-On DI Pipe 3-inch to 48-inch	TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug
Fitting with DI Pipe	EBAA Iron Series 1100 Megalug

Minimum length of pipe to be restrained shall be in accordance with DIPRA Thrust Restraint Design for Ductile Iron Pipe, latest edition.

Thrust blocks are not allowed unless specially approved by City of Opa-Locka Public Works Department Engineering Division in writing.

Fittings Conforming to ANSI/AWWA C110/A21.11-12 (Water & Sewer Use)

1. Restrained push-on joint fittings shall be cast ductile iron for use with ductile-iron pipe as specified above. Standard mechanical joint, and push-on joint fittings shall also be ductile iron for use with ductile-iron pipe as specified above. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, flange joints and push-on joints shall conform to ANSI/AWWA Standard C110/A21.10- 12, "Ductile-Iron and Gray-Iron Fittings ". In addition, fittings with mechanical joints and push on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings".

2. The weight of fittings shall be as given in ANSI/AWWA C110/A21.11-12 for ductile-iron fittings. The weight of mechanical joint fittings shall be as established in Tables 4 through 13. The weight of flanged joint fittings shall as stablished in Tables 14 through 21.

Fittings Conforming to ANSI/AWWA C153/A21.53-11 (Water & Sewer Use)

1. Fittings shall have a pressure rating of 350 psi for 4-inch to 24-inch fittings and 250 psi minimum working pressure for 30-inch to 64-inch fittings. All fittings with mechanical joints, and push-on joints shall conform to ANSI/AWWA Standard C153/A21.53-11, "Ductile-Iron Compact Fittings ". In addition, fittings with mechanical joints and push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12, “Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings" except as otherwise allowed in C153. Mechanical joint glands shall be ductile-iron only.

2. The weight of a fitting supplied under the contract shall not be less than ninety-five (95) percent of the tabulated nominal weight supplied by the manufacturer’s catalog literature for that fitting. Further, the weight of fittings supplied shall not be more than five (5) percent above the same tabulated nominal weight.

C. JOINTS AND ACCESSORIES

Joints in below-ground piping shall be flexible push-on or Mechanical joints, except where flanged joints are required to connect to valves, meters, and other equipment. Provide unrestrained buried joints except where restrained joints are specifically shown in the drawings. Joints in aboveground or submerged piping or piping located in vaults and structures shall be grooved end or flanged. Restrained joints for piping 6 inches and larger shall be TR-Flex by U.S. pipe or Flex Ring by American; or EBAA Iron Series 1700 Megalug. Weldments for restrained joints shall be tested by the liquid penetrant method per ASTM E165. Restrained joints for field closures shall be “Megalug” by EBAA Iron.

Push-On Type Joints (Single Gasket and Single Gasket with Gasket Restraint)

Push-on joints shall conform to ANSI/AWWA Standard C111/A21.11-12.

1. The required number of gaskets for each push-on joint pipe plus one extra for every 50 joints or fraction thereof, shall be furnished with each order. The gaskets shall be shipped in suitable protective containers. All single gasket pipe shall be as manufactured by United States Pipe and Foundry Company (Tyton), by the American Cast Iron Pipe Company (Amarillo Fastite), by McWane, Inc. (Mix of Tyton and Fastite), Tyler/Union (Tyton) or approved equal.

2. Push-on joints together with both their regular and gasket-restraint gaskets shall be of the design, dimensions and tolerances of either those provided by American Cast Iron Pipe Company (Amarillo Fastite/Fast-Grip) or those provided by United States Pipe and Foundry Company (Tyton/Field Lok). No other designs will be acceptable.

3. The pressure rating shall be stamped on the restrained gasket. The restrained gasket and joint restraining system shall conform to ANSI/AWWA Standard C111/A21.11-12 rated at the following:

Size	Pressure Rating (Min.)
4-inch through 12-inch	350
14-inch through 20-inch	250
24-inch	200
30-inch and above	150

4. The restrained gasket shall be manufactured a color other than black to allow for visual inspection of the pipeline. The restrained gasket color shall be consistent throughout the system and shall be inherent within the rubber, not painted.

5. This type of joint restraint shall not be used above grade or as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe. Pipe which will be field cut shall be measured at the location of the cut to check that the pipe diameter and circumference are within the particular manufacturer's tolerances for a spigot

Mechanical Joints

1. Mechanical joints for fittings shall conform to ANSI/AWWA Standard C111/A21.11-12. Bolt holes for mechanical joints shall be equally spaced, and shall straddle the vertical centerline. Tee head bolts and hexagonal nuts for all mechanical joints in fittings shall be of high strength low-alloy steel with composition, dimensions and threading as specified in ANSI/AWWA Standard C111/A21.11-12. Glands shall be of ductile-iron construction for ductile iron fittings, and cast gray iron or ductile iron for cast gray-iron fittings.

2. The proper number of gaskets, glands, bolts and nuts, all conforming to ANSI/AWWA Standard C111/A21.11-12, plus one extra gasket for every 10 joints or fraction thereof, shall be furnished with each order. The gaskets and joint accessories shall be shipped in suitable protective containers.

3. Follower glands held in place with set screws will not be acceptable.

4. Segmented glands will not be acceptable.

Mechanical Joint Megalug-Type Restraining Systems

1. In any mechanical joint or push-on joint underground piping system restrained glands may be utilized for underground pipeline. The restraint mechanism shall consist of multiple individually activated gripping surfaces to maximize the restraint capability. Rings and gripping surfaces to be ductile iron conforming to ASTM A536 "Ductile Iron Castings." The ductile iron casting of the restrained gland shall be bonded powder coated. The wedge and wedge assembly shall have a bonded

liquid polymer coating applied for corrosion protection. The gland shall utilize torque limiting twist off wedge actuation screws.

2. Foreign and domestic manufactured restrained glands are allowed for pipelines 24-inches and below unless otherwise required by the City due to Federal or State funded projects which require domestic manufacture. In sizes 30, 36, 42 and 48-inch the prior written permission of the Engineer is required to use non-domestic manufactured restraining glands. The country of origin shall be clearly identified on the restraining gland and shop drawing.

3. The City absolutely reserves the right to require other forms of restraint where in the opinion of the Engineer the use of this form of restraint is not in the best interest of the City and his decision shall be final. Use of this type of restraint is restricted to underground mechanical joint or push-on joint applications and in general may not be used above grade or as a substitute for flanged joints.

4. The Megalug restraint systems manufactured by EBAA Iron Sales, Eastland Texas, will be considered the standard of quality for comparison purposes and if the City has any doubts as to the durability, quality, or ability to restrain of a proffered substitute, the entity offering the substitute shall bear the entire burden of proving this equality to the complete satisfaction of the Engineer. Other manufacturers producing this type of restraint system shall submit data with their shop drawings showing that their restraint system has been in the marketplace for a minimum of three (3) years in this country.

5. Each thrust-resistant mechanical joint or push-on joint made up with this type of restraint and the pipe and fitting of which it is a part, shall be designed to withstand an axial thrust from an internal pipeline pressure of at least 150 psi at bulkhead conditions without reduction because of its position in the pipeline nor for support from external thrust blocks.

6. This type of joint restraint shall not be used above grade except as previously specified nor shall it be used as a carrier pipe within a casing. This type of restraint shall not be used with tape wrapped pipe or with too great a coating thickness on the exterior of the pipe.

Outlets and Nozzles

1. Provide outlets three quarters of an inch and smaller by direct tapping Ductile Iron Pipe in accordance with AWWA C600-10, Section 4.8. Provide outlets larger than three quarters of an inch up to 2 inches by tapping the pipe and attaching a service clamp. or use a threaded welded-on boss. Use American made stainless steel clamps for exposed piping. For outlets larger than 2 inches, use a tee with a flanged outlet. For outlets larger than 2 inches in buried piping, use a tee with a restrained joint outlet.

Ductile-Iron Pipe Weldments

1. All welding to ductile-iron pipe, such as for bosses, joint restraint, and joint bond cables, as applicable, shall be done at the place of manufacture of the pipe. Perform welding by skilled welders experienced in the method and materials to be used. Welders shall be qualified under the standard qualification procedures of the ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

2. Welds shall be of uniform composition, neat, smooth, full strength, and ductile. Completely grind out porosity and cracks, trapped welding flux, and other defects in the welds in such a manner that will permit proper and complete repair by welding.

3. Material for fittings with welded-on bosses shall have a Charpy notch impact value of minimum 10 ft-lbs under the conditions defined in ANSI/AWWA C151/A21.51-09. Test completed welds by the liquid penetrant method per ASTM E165. Completed welds shall be inspected at the place of manufacture by the liquid penetrant method. Conform to the requirements specified in ASTM E165, Method A, Type I or Type II. The materials used shall be water washable and nonflammable.

D. LININGS AND COATINGS

Saltwater Intrusion and Corrosive Soils Requirements

1. The project site is considered saltwater intrusion area where the installation is subject to groundwater level variation. For these areas, the City requires the use of V-Bio Enhanced Polyethylene Encasement and ductile iron pipe with a zinc basecoat under the asphaltic topcoat. All ductile iron pipe, fittings and valves shall be wrapped with the V-Bio Polyethylene Enhanced Encasement and have the zinc protective coating factory applied.

2. For corrosive soils encountered outside of saltwater intrusion areas during construction V-Bio Polyethylene Encasement shall be installed to protect the ductile iron main, fittings and valves.

3. Zinc Basecoat: The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m2 of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Ductile iron fittings shall also have a zinc protective coating sprayed on at the factory at a minimum of 3 mils.

4. The V-Bio Polyethylene Enhanced Encasement shall be accordance with AWWA C600 and ANSI/AWWA C105, “Polyethylene Encasement of Ductile-Iron Pipe Systems”. Color shall be blue for potable water and green for sanitary sewer,. Polyethylene encasement for use with ductile iron pipe systems shall consist of

three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside layer of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a corrosion inhibitor and antimicrobial biocide to control galvanic corrosion. Product: V-Bio or approved equal.

5. Polyethylene encasement for ductile-iron pipe shall be supplied as a flat tube meeting the dimensions of Table 1 in AWWA C105 and shall be supplied by the ductile-iron pipe manufacturer.

6. Plastic adhesive tape shall consist of polyolefin backing and adhesive which bonds to common pipeline coatings including polyethylene. Products: Canusa Wrapid Tape; Tapecoat H35; Polyken 934; AA Thread Seal Tape, Inc.; or approved equal.

7. Install the polyethylene to completely encase the pipe and fittings to provide a watertight corrosion barrier. Continuously secure overlaps and ends of sheet and tube with polyethylene tape. Make circumferential seams with two or more complete wraps, with no exposed edges. Tape longitudinal seams and longitudinal overlaps, extending tape beyond and beneath circumferential seams. Wrap bell-spigot interfaces, restrained joint components, and other irregular surfaces with wax tape or moldable sealant prior to placing polyethylene encasement. Minimize voids beneath polyethylene.

8. Place circumferential or spiral wraps of polyethylene tape at 2-foot intervals along the barrel of the pipe to minimize the space between the pipe and the polyethylene. Overlap adjoining polyethylene tube coatings a minimum of 1 foot and wrap prior to placing concrete anchors, collars, supports, or thrust blocks. Hand-wrap the polyethylene sheet, apply two complete wraps with no exposed edges to provide a watertight corrosion barrier, and secure in place with 2-inch-wide plastic adhesive tape.

9. Repair polyethylene material that is damaged during installation. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch-wide plastic adhesive tape. Repair polyethylene encasement at all service connections in accordance with AWWA C600- 10, Section 4.8.

Asphaltic Coating

1. All Ductile Iron pipe and fittings shall be outside-coated with an asphaltic material applied by means of the airless spray method. The exterior coating shall comply with ANSI/AWWA C151/A21.51 for this type of coating, shall be smooth without pinholes, thin, bare or overly thick areas. Smoothness shall be such that when hand rubbed, no “sand paper” feeling will be experienced and such that the spigot area will readily slide through the gasket without pulling, tearing, rolling or otherwise disturbing the sealing capabilities of the gasket. Spigot ends shall be beveled prior to coating to an extent that will permit ready insertion of the spigot through the gasket area.

E. Linings

For Water Mains - Cement-Mortar

1. Ductile Iron Pipe and fittings unless otherwise specified shall be double-thickness cement lined and seal-coated in accordance with ANSI/AWWA Standard C104/A21.4-14, "Cement Mortar Lining for Ductile-Iron Pipe and Fittings ".

For Sewage Force Mains – Ceramic Epoxy

1. The interior of all ductile iron pipes and fittings shall be lined with an epoxy lining. The epoxy lining shall be Protecto 401 Ceramic Epoxy as manufactured by the Protecto Division of Vulcan Painters, Inc. All DI pipe and fittings shall be lined with a minimum dry film thickness of 40 mils, except for the gasket groove and spigot end up to six (6) inches back from the end of the spigot which shall be lined with ten (10) mils of the material. All ductile iron pipe and fittings shall be checked for dry film thickness in accordance with the Society for Protective Coatings Paint Application Standard No. 2 (SSPC-PA 2). Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on that date. The pipe supplier shall furnish a certificate stating that lining applicator has complied with all specification requirements relative to the material, its application, and inspection. Surface preparation, number of coats, application of the lining material, and field touch-up shall be in strict accordance with the lining material manufacturer's recommendations. During the installation of the pipe, the lining material manufacturer shall provide the services of a field engineer to instruct and demonstrate to the Contractor’s personnel the procedure for the field touchup of lining where field cuts and taps were required. Holiday inspection shall be conducted using test equipment described in AWWA C210, Section 5.3.3.1. In accordance with coating manufacturer's recommendation, holiday testing may be conducted any time after the coating has reached sufficient cure.

F. INSPECTION AND CERTIFICATION

1. Inspection

   a. All ceramic epoxy lined ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PC-2 Film Thickness Rating. Re-line any pipe whose lining is below the specified minimum thickness.

   b. The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Re-line any pipe not passing the test.

   c. Each pipe joint and fitting shall be marked with the date of application of the lining system and with its numerical sequence of application on the date.

Procedures for Sealing Cut Ends and Repairing Field Damaged Areas:

1. Remove burrs caused by field cutting of ends or handling damage and smooth out the edge of the lining if rough.

2. Remove all traces of oil, grease, asphalt, dust, dirt, etc.

3. Areas of loose or damaged lining associated with field cutting the pipe shall be repaired, if approved by the Engineer, as recommended by the pipe manufacturer. The damaged area shall be stripped back by chiseling or scraping about 1 to 2 inches into the well-adhered lining before patching. The exposed metal and the 1 to 2-inch lining overlap shall be roughened with a coarse grade of emery cloth (#40 grit), rasp or small chisel. Avoid wire brushing or similar buffing which would make the surface too smooth for good adhesion.

4. With the area to be sealed or repaired absolutely, clean and suitably roughened, apply a coat of Protecto Joint Compound by brush in accordance with the manufacturer's recommendations.

PART 3 – EXECUTION

3.0.1. General:

A. Furnish and maintain all barricades and flashing warning lights necessary to warn of the construction throughout the project.

B. Pipe and fittings shall at all times be handled with great care to avoid damage. Exercise particular care not to injure pipe coatings. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions.

C. All work shall be performed by skilled workmen experienced in pipeline construction.

D. All pipe and fittings shall be adequately supported by clamps, brackets, straps, concrete supports, rollers or other devices as shown and/or specified. Supports or hangers shall be spaced so that maximum deflection between supports or hangers shall not exceed 0.050 inch for pipe filled with liquid, but shall not be further than 6 feet apart, whichever is closer, unless otherwise shown. All pipe supports shall be secured to structures by approved inserts or expansion shields and bolts.

E. All pipe shall be thoroughly cleaned internally before being installed. All pipes, except oxygen service, air and gas, shall be flushed with water and swabbed to assure removal of all foreign matter before installation. Air and gas piping shall be tapped with a hammer to loosen scale or other foreign matter that might be within the pipe, and

then thoroughly blown with a high pressure air hose. Furnish and maintain suitable air compressor.

F. Whenever possible, the pipe shall be installed with minimum 48-inches of cover. Deviations shall not be installed without written approval by the Owner.

G. Joints may only be opened to adjust alignment by half of the AWWA or manufacturer's recommended opening (which is smaller).

H. Tie Rods: Unless otherwise indicated on the drawings, the size and number of tie rods for a joint or installation shall be as recommended by the manufacturer's design chart for a working pressure of 150 psi. Tie rods shall be installed as recommended by the manufacturer.

3.0.2. EXCAVATION FOR PIPING

A. Refer to Section 02314 “Excavation, Backfill and Fill for Structural Facility and Utility Systems”.

3.0.3. INSTALLATION OF PIPE, FITTINGS AND VALVES

A. General:

1. The design drawings are in some cases diagrammatic. They may not show every bend, off-set, elbow or other fitting which may be required in the piping for installation in the space allotted.

2. The centerline of the pipe shall not vary by more than 2 inches from the location shown on the plans and the top of the pipe shall not vary by more than 2 inches from the established grade, except at points where this tolerance must be changed to clear obstructions, or make connections.

3. Upon satisfactory excavation of the pipe trench and completion of the pipe bedding, a continuous trough for the pipe barrel and recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support and no pressure will be exerted on the pipe joints from the trench bottom. Placing and compacting the bedding up to the level of the lower one-third of the pipe barrel shall immediately follow the installation of pipe.

4. The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.

5. Any pipe found defective shall be immediately removed and replaced with sound pipe.

6. Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the Engineer. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

7. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

8. Lines shall be laid straight and depth of cover shall be maintained as shown on the Plans. Grades or pipe centerline elevations are shown on the Plans. The Contractor will be permitted to use surveying instruments to maintain alignment and grade. At least one elevation shot shall be taken on each length of pipe and recorded. No abrupt changes in direction or grade will be allowed.

9. The pipe and fittings shall be restrained at reaction points and at any point shown on the Plans or as shown in City's Standard Details or as specified herein.

10. The pipe manufacturer shall instruct the Contractor on the making of restrained joints supplied as a part of the pipe and fitting purchase.

11. All bolts, nuts, gaskets and other joint materials for use in the pipeline shall be stored under cover and properly protected.

12. Gaskets shall be stored in their original packing bags or containers, and care shall be exercised to keep them away from heat, light oil, gasoline or other petroleum products. Gaskets shall be kept clean at all times and not handled with greasy or dirty hands.

13. During laying operations, do not place tools, clothing, or other materials in the pipe.

14. When pipe laying is not in progress, close the ends of the installed pipe by placing a child-proof and vermin-proof plug.

15. The joints of all pipelines shall be properly homed. The particular joint used shall be approved by the Engineer prior to installation. If assembly is underwater, lubricant recommended by the manufacturer for underwater use is required.

16. Unless otherwise directed, pipe shall be laid with the bell ends facing in the direction of laying and for lines of an appreciable slope, the bells shall, at the discretion of the Engineer, face upgrade.

17. Each individual length of pipe and each fitting shall be solidly and evenly bedded throughout its length on a prepared bed on the floor of the trench and not supported in position on blocks or wedges. Pipe shall only be laid when the two preceding lengths have been thoroughly embedded in place to prevent any movement or disturbance of the finished joint. Any pipe which is disturbed or found to be defective after laying shall be taken up and relaid or replaced.

18. Bolts and nuts in flanged and mechanical joints shall be tightened in accordance with the recommendations of the pipe manufacturer for a leak-free joint. The workmen shall exercise caution to prevent overstress. Torque wrenches shall be used until, in the opinion of the Engineer, the workmen have become accustomed to the proper amount of pressure to apply on standard wrenches.

19. Cutting of pipe for inserting valves, fittings, etc., shall be done by the Contractor in a neat and workmanlike manner without damage to the pipe, the lining, or the coating. Pipe shall be cut with a mechanical pipe saw. After cutting the pipe, the plain end shall be filed to remove all sharp edges and burrs.

20. Mains shall be cleaned in accordance with Section 02505 "Cleaning and Testing."

21. All underground pipe shall be color coded as required by the Florida Administrative Code as specified in Section 15001 “Water Mains” and Section 15002 “Force Mains”.

22. **No request for additional compensation or Project time (except for a non-compensable time extension at the sole discretion of the Engineer, whose decision shall be final) resulting from encountering utilities or structures not shown, or differing in location or elevation from that shown, will be considered. The Contractor shall explore sufficiently ahead of the Work to allow time for any necessary adjustments without delay to the progress of the installation. Costs due to delays occasioned by encountering underground utilities or structures which could have or should have been discovered by timely exploration ahead of the Work shall rest solely with the Contractor.**

23. Limit onsite pipe storage to a maximum of one week. Use unloading and installation procedures that avoid cracking of the lining. If necessary, use plastic sheet bulkheads to close pipe ends and keep cement-mortar lining moist. Deliver the pipe alongside the pipe laying access road over which the pipe trailer-tractors can travel under their own power. Place the pipe in the order in which it is to be installed and secure it from rolling. Sandbags may be used to support the pipe in the ditch but no pipe shall be laid on blocks, except by the written permission of the Engineer of Record. Do not move pipe by inserting any devices or pieces of equipment into the pipe barrel. Field repair linings damaged by unloading or installation procedures. Flanged joints, mechanical joints and push-on joints in cast iron pipe and fittings may be made under water.

B. Installation of Ductile Iron Pipe

1. All ductile iron pipes shall be installed true and straight in accordance with ANSI/AWWA C 600 latest revision. Allowable pipe deflection shall not exceed 50% of the maximum deflection, as recommended by the pipe manufacturer.

2. Push-on, restrained push-on and mechanical joints in ductile cast iron pipe and fittings shall be made in accordance with the manufacturer's standards except as otherwise specified herein. Joints between push-on and mechanical joint pipe and/or fittings shall be made in accordance with ANSI/AWWA C600 except that deflection at joints shall not exceed one half of the manufacturer's recommended allowable deflection.

3. Before laying push-on, restrained push-on and mechanical joint pipe and fittings, all lumps, blisters and excess bituminous coating shall be removed from the bell and spigot ends. The outside of each spigot and the inside of each bell shall be wire brushed, and wiped clean and dry. The entire gasket groove area shall be free of bumps or any foreign matter which might displace the gasket. The cleaned spigot and gasket shall not be allowed to touch the trench walls or trench bottom at any time. Vegetable soap lubricant shall be applied in accordance with the pipe manufacturer's recommendations, to aid in making the joint. The workmen shall exercise caution to prevent damage to the gasket or the adherence of grease or particles of sand or dirt. Deflections shall be made only after the joint has been assembled.

4. Taps into ductile iron pipe for corporation stops shall be AWWA tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer.

    a. For Water Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

    b. For Sewage Mains:

        1) After the tap has been made, and the corporation stop installed into the pipe, the lining on the inside of the pipe shall be repaired with ceramic epoxy joint compound in accordance with manufacturer's recommendations. The exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

5. Any work within the pipe shall be performed with care to prevent damage to the lining. Damaged lining shall be repaired as recommended by the pipe manufacturer or the pipe section replaced as required by the Engineer.

6. Sandbags may be used to support the pipe in the trench, but no pipe shall be laid on blocks, except by the written permission of the Engineer.

7. Since some settling of the pipe may occur due to unfavorable ground conditions the Contractor shall exert every care in laying the pipe to the required grade. Prior to backfilling, the pipe grade and settlement shall be checked, and the Contractor shall correct any excessive deflections or high points in the line to the satisfaction of the Engineer and at no additional cost to the City.

8. Unless otherwise approved by the Engineer, the pipeline shall be cleaned at intervals not to exceed 30 lengths of pipe. Cleaning methods shall meet the Engineer's approval, and must be sufficient to remove silt, rocks, or other debris which may have entered the pipeline during its installation.

9. Connections to existing mains shall be coordinated as required under Section 01110 "Special Project Requirements", 1.0.6. Connections to Existing Piping.

3.0.4. FIELD QUALITY CONTROL

A. All water mains shall be flushed to remove all sand, debris, rock and other foreign matter. Dispose of the flushing water without causing a nuisance or property damage.

B. Pressure and Leakage Testing: Hydrostatically test all pressure pipe. The test pressure for potable water mains shall be 150 psi. The test pressure for sewage force mains shall be 100 psi. Test Ductile Iron Pipe mains in accordance with ANSI/AWWA C600 latest edition once all backfill is in place and fully compacted, and after all thrust blocks have cured to their design strength. Do not test against closed valves. All pumps, piping and gauges shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Engineer. Pump shall be of a non-pulsating type suitable for this application and gauge accuracy certification may be required at the Engineer of Record's discretion. All pressure and leakage testing shall be done in the presence of a representative of the City as a condition precedent to the approval and acceptance of the system.

END OF SECTION

15100 VALVES – GENERAL

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall provide all tools, supplies, materials, equipment, and labor necessary for furnishing, epoxy coating, installing, adjusting, and testing of all valves and appurtenant work, complete and operable, in accordance with the requirements of the Contract Documents. Where buried valves are shown, the Contractor shall furnish and install valve boxes to grade, with covers, extensions, and position indicators.

B. The provisions of this Section shall apply to all valves and valve operators specified in the various sections of these specifications except where otherwise specified in the Contract Documents. Valves and operators in particular locations may require a combination of units, sensors, limit switches, and controls specified in other sections of these specifications.

C. .All valves specified herein shall be furnished with an affidavit from the manufacturer(s) certifying that the valves furnished comply with the applicable provisions of the AWWA specifications, as modified herein. That they were factory tested in accordance with the AWWA Standard Leakage and Hydrostatic Tests as modified herein, with a certified test report furnished to the Department for each valve

1.0.2. REFERENCE SPECIFICATION, CODE AND STANDARDS

A. Codes: All codes, as referenced herein, are specified in Section 01090 "Reference Standards."

B. Commercial Standards:

ANSI/AWWA C500	Standard for Metal-Seated Gate Valves for Water-Supply Service
ANSI B16.1 125,	Gray Iron Pipe Flanges and Flanged Fittings, Classes 25,
ANSI B16.5	Pipe Flanges and Flanged Fittings
ANSI/ASME B1.20.1	Pipe Threads General Purpose (Inch).
ANSI/ASME B31.1	Power Piping
ASTM A36	Specification for Carbon Structural Steel
ASTM A48	Specification for Gray Iron Castings

ASTM A126	Specification for Gray Iron Castings for Valves, Flanges, Pipe Fittings
ASTM A536	Specification for Ductile Iron Castings
ASTM B61	Specification for Steam or Valve Bronze Castings
ASTM B62	Specification for Composition Bronze or Ounce Metal Castings
ASTM B148	Specification for Aluminum Bronze Sand Castings
ASTM B584	Specification for Copper Alloy Sand Castings for General Applications
ANSI/AWWA C504	Rubber Sealed Butterfly Valves
AWWA C508	Swing Check Valves for Waterworks Service, 2 Inches Through 24 Inches NPS
ANSI/AWWA C509	Resilient Seated Gate Valves, for Water-Supply Service
AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants

1.0.3. SUBMITTALS

A. Shop Drawing: Shop drawings of all valves and operators including associated wiring diagrams and electrical data, shall be furnished as specified in Section 01300 "Submittals".

B. Valve Labeling: The Contractor shall submit a schedule of valves to be labeled indicating in each case the valve location and the proposed wording for the label.

C. Affidavit from the manufacturers certifying that the valves furnished for this Project comply with the most recent applicable provisions of the AWWA Standards as modified herein.

D. AWWA Standard Leakage and Hydrostatic Test factory test with certified test report for each valve.

E. "Pre-Approved Product List," shop drawings, test and compliance certifications of all valves.

1.0.4. QUALITY ASSURANCE

A. Valve Testing: Unless otherwise specified, each valve body shall be tested under a test pressure equal to twice its design water working pressure.

B. Bronze Parts: Unless otherwise specified, all interior bronze parts of valves shall conform to the requirements of ASTM B62.

PART 2 – PRODUCTS

2.0.1. VALVES

A. General: The Contractor shall furnish all valves, valve operating units, stem extensions, and other accessories as shown or specified. All valves shall be new and of current manufacture. Where buried, these valves shall be provided with valve boxes, covers and valve extensions.

B. All valves shall be products of domestic manufacturing firms, as per the City's Public Works Manual. The manufacturer shall have a minimum of five (5) years of experience in manufacturing valves of the sizes required for this project.

C. Valve bodies shall be epoxy coated cast iron conforming to ASTM A126, Grade B, ASTM A48, Class 40 or Ductile Iron ASTM A536, Grade 65 45 12. Where required to meet design operating conditions, valve bodies shall be manufactured of higher strength materials. Valve bodies shall have integral hubs for housing shaft bearings and seals'."

D. All castings shall be clean and sound, without defects of any kind and no plugging, welding or repairing of defects will be permitted. All bolt heads and nuts shall be hexagonal conforming to ANSI B18.2 and shall be type 316 American made stainless steel. Gaskets shall be full face and made of natural or synthetic elastomers in conformance with ANSI B16.21 suitable for the service characteristics, especially chemical compatibility and temperature. Nonferrous alloys of various types shall be used for parts of valves as specified. Where no definite specification is given, the material shall be the recognized acceptable standard for that particular application.

E. All buried valves shall be provided with valve boxes unless otherwise indicated. Valves boxes shall be as per Section 05550 "Castings"

F. All buried valves and other valves located below a concrete operating deck or level, specified or noted to be key operated, shall have an operator to finish grade or deck level, non-rising stem, a 2-inch square AWWA nut with skirt, and cover or box and cover, as may be required.

G. Protective Coating: Except where otherwise specified, ferrous surfaces, exclusive of American made stainless-steel surfaces, in the water passages of all valves 4 inch and larger, as well as the exterior surfaces of all submerged valves, shall receive a fusion bonded epoxy coating in accordance with AWWA C550. Flange faces of valves shall not be epoxy coated. The Contractor, through the valve manufacturer, shall

certify in writing that such coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these specifications.

H. Valves shall be furnished with operators, provided by the valve manufacturer. All operators of a given type shall be furnished by the same manufacturer. All valve operators, regardless of type, shall be installed, adjusted, and tested by the valve manufacturer at the manufacturing plant. Operator orientation shall be verified with the Engineer prior to installation.

I. All operators, unless otherwise specified, shall turn counter-clockwise to open. Operators shall have the open direction clearly and permanently marked. All valve operators, manual, motor and pneumatic, shall be provided with the valve by the valve manufacturer.

J. All butterfly valves shall have a torque guard installed.

K. Where buried, the valves shall have extensions with square nuts or floor stands.

PART 3 – EXECUTION

3.0.1. VALVE INSTALLATION

A. General: All valves , operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. Valves shall be firmly supported to avoid undue stresses on the pipe.

B. Access: All valves shall be installed to provide easy access for operation, removal, and maintenance and to avoid conflicts between valve operators and structural members.

C. General:

1. Resilient-seated gate valves shall be placed in vertical positions only. Horizontal placement of resilient-seated gate valves, even if supplied with bevel gearing, shall not be accepted.

2. The installation of all buried valves shall include a valve box and riser or manhole, as appropriate, in accordance with the City's Standard Details.

3. Riser pipes, valve boxes and manhole lids shall be carefully centered and set flush with the finished grade if in paving, or with the top of the ground if out of paved areas. All valve boxes shall be held in position with concrete as shown on the City Standard Details.

4. All valves shall be checked before installation to make sure they operate properly. All valves shall be thoroughly cleaned before installation, and during installation

they shall be carefully aligned vertically and/or horizontally as indicated on the Plans.

5. The Contractor is advised that he is required to furnish all labor, materials and equipment necessary to pressure test each valve furnished by the City, bi-directionally, prior to installation, to the satisfaction of the Engineer.

6. All mechanical joint ended valves shall be connected to the abutting pipe or fittings in accordance with the requirements of Section 15060 “Piping and Fittings”.

7. Upon completion of the Project, but prior to final acceptance, the Contractor in the presence of the Engineer, shall fully open each valve installed by him, except at connections to existing City mains. For valves 16-inch and larger, the Contractor shall count the number of turns required to operate each valve from a completely closed to a fully opened position, and shall paint the number on the bottom of the valve's valve box lid or manhole cover. **VALVES AT CONNECTIONS TO EXISTING CITY MAINS SHALL ONLY BE OPERATED BY CITY FORCES.**

8. Valves which are a part of the section of pipe being installed encased with polyethylene, shall also be encased with polyethylene in accordance with ANSI/AWWA C105/A21.5 Method A, B or C.

END OF SECTION

15102 TAPPING SLEEVES AND TAPPING VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install tapping sleeves and tapping valves, as shown on the Plans and/or as specified herein. All items not specifically mentioned in these specifications or noted on the Drawings, but which can be reasonably inferred as necessary to make a complete working installation, shall be included.

B. Tapping sleeves, where shown on the Plans, shall fit the existing pipe to be tapped and the Contractor shall determine the outside diameter and type of pipe before ordering the sleeve. Field verification of dimensions is directed since actual locations, distances and levels will be governed by actual conditions. The Contractor shall adjust his work to conform to said field conditions.

C. The Contractor is responsible for having the work properly scheduled, location excavated in accordance with Trench Safety requirements, pipe restrained, excavation dewatered and all conditions ready for the tap to be made.

1.0.2. RELATED WORK

Section 15100 “Valves, General”

Section 15120 “Gate Valves”

1.0.3. MANUFACTURE

A. All valves shall be the products of domestic manufacturing firms which have been regularly engaged in the production of valves for at least 5 years. All valves specified herein shall be tested at the factory in accordance with the AWWA Standard Leakage and Hydrostatic Test as modified herein and a certified test report shall be furnished for each valve upon request.

1.0.4. SUBMITTALS

A. Shop Drawings: Submit shop drawings for all tapping sleeves and valves not on Pre-Approved products List.

B. Complete technical data and information on tapping sleeves for pipe other than cast iron shall be submitted to the City for approval on an individual basis.

PART 2 – PRODUCTS

2.0.1. TAPPING SLEEVES

A. Tapping saddles approved for use by the City are shown on Sheet 6.0 Tapping Sleeves of the Pre-Approved Product List.

B. Tapping sleeves with MJ outlets to connect MJ gate valves shall be constructed of 316 stainless steel. This shall apply to both water and sewer applications unless otherwise approved by the City. These units shall be manufactured of AISI Type 316 stainless steel passivated after welding or Type 316L. Threaded fasteners shall be Type 316 and gasketing shall be Neoprene, EPDM, or Nitrile for sanitary sewer use and SBR for potable water. A standard resilient-seated gate valve shall be attached to the MJ outlet of the sleeve.

C. Cast Iron tapping sleeves shall be designed to withstand a working pressure of at least 150 psi. Cast iron tapping sleeves shall be used with a flanged tapping valve.

D. Full size taps (8-inch tap on an existing 8-inch main, 12-inch tap on an existing 12-inch, etc) main shall be made with a 316 stainless steel tapping MJ outlet sleeve. The inside diameter of the mechanical joint outlet fitting and branch shall be larger in diameter than nominal to allow the use of a full-size cutter.

E. Tapping saddles for concrete pipe sewer mains 42-inches and larger may use a fusion bonded epoxy carbon steel saddle with 316 stainless steel straps. Large diameter saddles shall be individually approved by the City on a case by case basis.

F. Each mechanical joint on the tapping sleeve shall be furnished complete with tee-head bolts and nuts complying with ANSI/AWWA C111/A21.11 "Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings" (latest edition). Tee-head bolts and hex nuts shall be of high strength cast iron. Bolts and nuts to join the two halves of the sleeve together shall be standard carbon steel, hex, or tee-head bolts and nuts which have been galvanized.

G. The tapping sleeves, including outlet flanges shall be as dimensioned and thicknesses shall be as required by AWWA/ANSI C110/A21.10. The tapping sleeves shall be mechanical joint ended, on the run, and shall have a connecting flange outlet, with centering groove (for all valves size 12-inch and below and for valves above 12-inch if available from the manufacturer), for connecting to the tapping valve. For tapping sleeves with outlets 12 inches and smaller, the connecting flange joint between the tapping sleeve and the tapping valve shall be in compliance with all applicable provisions of MSS Standard Practice SP60, latest revision, as developed and approved by the Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street N.E. Vienna, VA. 22180. For tapping sleeves with outlets larger than 12 inches, the connecting flange must provide a matching fit with tapping valves by other manufacturers.

H. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA

Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

I. Each tapping sleeve shall be furnished complete with all necessary split end gaskets, longitudinal gaskets and two-piece (split) steel glands (follower glands held in place by set screws not acceptable). Gasket shall be shipped separately in suitable protective containers. Material for split end gaskets shall conform to ANSI/AWWA Standard C111/A21.11. Material for longitudinal gaskets shall be rubber conforming to ANSI/AWWA Standard C111/A21.11.

J. The sleeves shall be suitable for use with ductile iron pipe conforming to ANSI/AWWA Standard C151/A21.51, "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids", with wall thickness and outside diameter as specified in Table 51.4 and 51.5. The sleeves shall also be suitable for use with other cast iron pipe with differing outside diameters and other types of pipe where required.

K. Each tapping sleeve shall be Factory Hydrostatically tested on pipe to verify proper fit and weld integrity with zero leakage.

2.0.2. TAPPING VALVE

A. Resilient-seated tapping valves shall have a mechanical joint outlet end conforming to ANSI/AWWA Standard C111/A21.11-00, "Rubber Gasket Joints of Ductile-iron and Gray-Iron Pressure Pipe and Fittings," for connection to new piping and a flange inlet with centering ring, for connecting to the tapping sleeve.

B. The tapping valves shall conform to the requirements listed for gate valves, including bypass valve when applicable, shall be furnished complete with all joint materials. Joint materials for the flanged inlet shall be ANSI-sized and approved and shall include a 1/8-inch thick full-faced neoprene gasket, and hot dipped galvanized carbon steel bolts and nuts with internal threads tapped or retapped after galvanizing. The flange inlet gaskets shall conform to the gasket material and property requirements set forth in ANSI/AWWA Standard C111/A21.11-00. All gaskets and seals shall be neoprene, Buna-N, or approved equal, but not natural rubber. The mechanical joint outlets shall include the necessary joint materials conforming to the requirements of joint materials for mechanical joint ended gate vales as specified in Section 5.07.3 "Valves - Resilient Seated Gate Valves." Bolt holes in the flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Resilient-seated tapping valves shall be as manufactured by U.S. Pipe and Foundry Co., American Flow Control, Mueller, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. Taps 20-inches and smaller for water mains will be made by City forces. Taps of any size into concrete mains shall be done by a tapping specialist with credentials acceptable to the Department.

B. Taps of any size into concrete or PCCP water mains shall be made by a tapping specialist with credentials acceptable to the City.

C. Tap of any size to sewage force mains shall be made by a tapping specialist with credentials acceptable to the City.

D. The tapping specialist shall be from any of the following:

   1. EA Tapping Services

   2. Hydra-Stop, a division of ADS LLC.

   3. Rangeline Tapping Service, Inc.

   4. T.D.W. Services Inc.

   5. or approval equal

E. The Contractor shall notify the Engineer at least seven days in advance of when he will be ready to make the connection and shall have the tapping valve installed on the existing main with the new equipment satisfactory pressure tested and sufficient excavated work areas prepared for the City forces when they arrive to make the tap.

F. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized at design test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the Engineer, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap. No leakage shall be permitted at any joint in either the tapping sleeve/saddle or valve.

G. The tapping valve requires the installation of a cast iron riser pipe complete with valve box and cover, centered over the operator, and set in concrete.

H. All necessary sheeting, shoring, dewatering, excavation, backfill and compaction, surface repairs, and other items and work appurtenant to or incidental to the work shall be performed by the Contractor.

I. For Concrete mains the tapping saddle shall be tested after installation at a pressure of 5 psi lower than the operating pressure of the pipeline at the time of the test. A

pressure reading shall be taken from an air release valve prior to performing the pressure test on the saddle.

J. The Contractor shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. The test shall be conducted in the presence of the City's Inspector. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve.

K. When the invert of the tapping valve is under water, interlocking sheeting and tremie concrete shall be used, unless otherwise approved by the City. Seal the perimeter of all pipes passing through the sheeting below the water table. Only minimum seepage will be permitted. The cofferdam must be designed and sealed by a State of Florida, P.E. No work will be permitted within the cofferdam until it is demonstrated to the City to be dry. Approval to remove the initial water in the cofferdam must be obtained from the City and other governmental agencies jurisdiction over the work.

3.0.2. TAP BY CITY FORCES

A. The Contractor shall notify the City at least 48-hours in advance of when he will be ready to make the tap and shall have the tapping sleeve and valve installed on the existing main and satisfactorily tested as specified below, with a sufficient excavated work area prepared for the City forces when they arrive to make the tap.

B. The Contractor shall furnish and install a mechanical joint plug on the free end of the tapping valve, and shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations. No leakage will be permitted at any joint in either the tapping sleeve or tapping valve. The tapping sleeve and valve shall be filled with water and then pressurized to the required test pressure. Duration of the test shall be determined by the City. The test shall be conducted in the presence of the City's Inspector, who will notify City forces of the satisfactory conclusion of the test, and arrange a definite time and date for them to arrive at the site to make the tap.

C. A crane or other suitable equipment as approved by the City, shall be furnished by the Contractor to unload the tapping machine, position it in the trench for bolting to the valve, and to reload it after the tapping operation has been completed.

D. City forces will connect the tapping machine to the valve, and disconnect it after the tap is complete; however, the Contractor shall furnish suitable devices or material to support the machine in the trench for proper alignment, as required by the City. The Contractor shall aid the City's forces whenever and to whatever extent necessary for the tapping operation to be performed efficiently and without any undue time lost.

3.0.3. TAPPING BY NON-CITY FORCES

A. The Contractor shall comply with all applicable provisions of Subsections 3.01 and 3.02, above, including installation and pressure testing of tapping sleeve and valve in the presence of the City's Inspector.

B. Since cutting equipment used for this type of installation is of a special design, the Contractor shall make provisions for furnishing a tapping specialist to perform actual tapping operation. The qualifications of the tapping specialist shall be forwarded to the City prior to any tapping work. The Contractor shall also furnish all incidental equipment necessary to operate the tapping machine and perform a complete operation to the satisfaction of the Engineer.

C. The tapping valve shall be installed in the horizontal position with the operator in the vertical position, and shall include a valve box cover. Tapping valves shall be left in the closed position.

D. All tapping operations shall be conducted under the direct supervision of the previously approved tapping specialist. All operations shall have prior approval of the City.

3.0.4. RECORD DRAWINGS

A. Record Drawings shall be prepared in accordance with Section 01720.

B. The location and elevation for each valve, tapping outlet, fitting, service line and other appurtenances along the pipeline shall be recorded by the Contractor's Florida Registered Surveyor and Mapper.

END OF SECTION

15120 GATE VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install gate valves complete and operable, including all appurtenances and accessories.

B. The City will permit the use of resilient seated type gate valves in potable water systems, as described herein

C. Gate valves shall be used on mains 3-inch diameter to 12-inch diameter

PART 2 – PRODUCTS

2.0.1. GATE VALVES, GENERAL

A. As used herein, "ANSI" denotes the American National Standards Institute; "AWWA" denotes the American Water Works Association; and "ASTM" denotes the American Society for Testing and Materials.

B. Gate valves 4-inch through 6 inch diameter shall be of the non-rising stem design, shall fully comply with the requirements of AWWA C509 for resilient-seated gate valves. Gate valves shall be designed for a minimum working pressure of 250 psi and a test pressure of 500 psi. Gate valves shall be manufactured by American, Mueller, or approved equal.

C. Gate valves shall have a disk on top of the operating nut, specifying number of turns and direction to open.

D. All work performed according to the standards cited above, except prototype testing, shall be subject to inspection and acceptance by the City or its representatives who shall have access to all places of manufacture where these valves are being produced and tested. Suppliers shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include Country, City, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

E. All valves shall conform with ANSI/NSF Standard 61, "Drinking Water System Components-Health Effects".

F. Grades B and C bronze as listed in Table 1 of AWWA C500, latest revision shall not be used in the fabrication of any of the various valve types listed in this specification. Aluminum bronzes, if used, shall not dealuminize and the method of preventing this shall be fully described in the submittal.

2.0.2. RESILIENT SEATED GATE VALVES

A. Resilient-seated gate valves shall be manufactured in accordance with the applicable provisions of ANSI/AWWA C509, "Resilient-Seated Gate Valves for Water Supply Service," latest revision, as modified herein.

B. All resilient-seated gate valves shall have nonrising stems (NRS) and are to be installed under buried and/or submerged conditions.

C. The design working water pressure for all resilient-seated gate valves shall be a minimum of 250 psig for all sizes. In addition to the pressure requirements, the valve assembly and mechanism shall be capable of withstanding an input torque of 200 ft-lbs for valves 4-inch and smaller, and 300 ft-lbs for valves 6-inch and larger.

D. With the valve open the unobstructed waterway shall have a diameter not less than the full nominal diameter of the valve.

E. All valves specified herein shall be furnished with an Affidavit of Compliance from the manufacturer as required by ANSI/AWWA C509. This Affidavit of Compliance shall state that the valve and all materials used in its construction conform to the applicable requirements of the standard under which the valve is manufactured and the City's specifications and that all tests specified in the applicable standard have been performed and all test requirements met. The manufacturer shall have been engaged in the production of valves for at least five (5) years.

F. Submit to the Engineer for approval:

1. Catalogue Data: Including illustrations and a parts list that identifies the materials used for various parts. The information shall be in sufficient detail to serve as a guide in the assembly and disassembly of the valve and for ordering repair parts.

2. Weight information: Provide a statement of the net assembled weight for each size of valve exclusive of joint accessories.

3. Assembly Drawings: One set of drawings showing the principal dimensions, construction details, and materials used for all parts of the valve.

G. Contractors shall, with their shop drawing submittals, submit the company name and location of the actual manufacturer of the valve which shall include country, city, and street address of the manufacturer. Where valves are not domestically produced and tested, the City reserves the right to require that the Affidavit of Compliance be signed and sealed by a Professional Engineer, licensed to practice in the state of where the importing firm is located or the State of Florida. When this is required, the City's decision as to its necessity shall be final and no extra compensation will be allowed.

G. Valve Body:

1. Gate valve body and bonnet shall be cast iron conforming to ASTM A126, Class B with resilient seat gate and O-ring seals. The gate shall be cast iron with a vulcanized rubber coating with no metal to metal contact when in the fully closed position and a smooth unobstructed waterway when in the fully opened position.

2. All ferrous metal items in contact with the line fluids, except gray or ductile cast iron, shall be AISI Type 316 stainless steel. Valve body and bonnet gaskets shall be rubber or rubber composition, inorganic mineral fiber and paper are not acceptable. Rubber and rubber composition materials shall be suitable for use in water containing chlorine or chloramines and in sanitary sewage.

3. Valves shall be flanged or mechanical joint, with non-rising stems, and with a 2-inch square standard AWWA operating nuts unless otherwise specified or required by the City or designee.

H. External Ferrous Items:

1. All external ferrous items, except gray or ductile cast iron, shall be stainless steel.

2. All internal ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

I. Resilient Seats:

1. Shall be applied to the gate only and shall seat against a corrosion-resistant surface. The surface shall be nonmetallic, applied in a manner to withstand the action of line fluids and the operation of the sealing gate under long-term service and shall coat all surfaces in contact with the liquid. The nonmetallic surface interior surface coating shall conform with ANSI/AWWA C550. Resilient seats shall be bonded or mechanically attached to the gate. No natural rubber products will be acceptable. Seat materials shall be EPDM, Nitrile or approved equal and shall have excellent resistance to sewage combined with good to excellent resistance to compression set. The method used for bonding or vulcanizing the resilient seat material to its substrate shall be proven by ASTM D429, "Test Methods for Rubber Property-Adhesion to Rigid Substrates," Method A or B. For method A, the minimum strength shall not be less than 250 psi. When Method B is applicable, the peel strength shall not be less than 75 lb/in. All exposed mechanical attaching devices and hardware used to retain the resilient seat shall be of AISI Type 316 stainless steel.

J. Mechanical Joint Valves:

1. Shall have ends complying with ANSI/AWWA C111/A21.11. Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place with set screws will not be acceptable. Bolt holes in the flanges of the mechanical joint shall be equally

spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves for use in sewage shall have neoprene gaskets.

K. Painting and Coatings:

1. The exterior valve surface shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-494B. Paintings and coatings shall conform to the requirements of ANSI/AWWA C550 for the interior of the valve. Interior and exterior coatings shall conform with ANSI/AWWA C515, Section 4.5.2 "Coating."

L. Testing:

1. All production tests shall be performed on all valves supplied without exception. Operation, shell and seat tests shall be performed as specified in ANSI/AWWA C509.

PART 3 – EXECUTION

3.0.1. GENERAL

A. All valves shall be installed in accordance with provisions of Section 15095 “Vales, General.”

END OF SECTION

15125 PLUG VALVES

PART 1 – GENERAL

1.0.1. SCOPE

A. The Contractor shall furnish and install plug valves, complete and operable, as shown and specified herein, appurtenances, operators, and accessories.

B. Plug Valves 30-inch and larger shall have the actuator installed with a manhole structure. Space limitations may preclude full structures underground.

C. Plug valves are required for this project for the 30-inch force main. The substitution of plug valves with resilient-seated gate valves will not be accepted.

1.0.2. RELATED WORK SPECIFIED ELSEWHERE

A. Section 15100, “Valves, General”

1.0.3. QUALITY ASSURANCE

A. The plug valve manufacturer shall have a line of parts available to support the plug valve furnished to the City. Manufacturers with a history of unsatisfactory performance or discontinuing spare parts shall be disapproved.

PART 2 – PRODUCTS

2.0.1. PLUG VALVES

A. Plug valves shall be of the non-lubricated, eccentric seating plug type with synthetic rubber-faced plugs. All valves shall be provided with limit stops and rotate 90° from fully open to fully shut. The minimum working pressure for all valves shall be 150 psi for valves through 36-inch, and the test pressure shall be at least 270 psi for valves up through 12-inch and at least 230 psi for valves 14-inch and larger. Plug valves located at the discharge end of a pump station shall have a 100 percent port area. Plug valve 6- inch and smaller with an 80 percent minimum port area are acceptable only at locations away from lift stations. Plug valves 8-inch and larger shall be full opening with 100 percent port area. Plug valves, 8-inch and smaller shall be designed for operation in a horizontal pipeline with the valve shaft in a vertical position. Plug valves larger than 8- inch shall be designed for operation in a horizontal pipeline, with the valve shaft in a horizontal position and the operating shaft in a vertical position. The plug valves shall be as manufactured by DeZurik Company, Pratt, Kennedy, or equal as approved by the City, and shall be the standard product of a manufacturer which has produced and sold such equipment for a period of at least five (5) years. Valves shall be suitable for buried, submerged service

B. Mechanical joint buried plug valves shall have ends complying with ANSI/AWWA Standard C111. "Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings". Mechanical joint gaskets, glands, tee-head bolts and hex nuts shall be included with the valve. Segmented glands or follower glands held in place by set screws will not be acceptable. Bolt holes in flanges of the mechanical joint shall be equally spaced and shall straddle the vertical centerline. Gaskets shall be shipped separately in suitable protective containers. Valves shall have neoprene gaskets. Plug valves shall be operated with a standard AWWA 2-inch square nut through a totally enclosed worm gear actuator

C. Plug valve body and plug shall be cast iron conforming to the requirements of ASTM Standard A126, “Gray Iron Castings for Valves, Flanges and Pipe Fittings”, Class B, and all nuts, bolts, springs, washers, and similar component items exposed to the operating fluid shall be AISI Type 316 stainless steel. Resilient plug facing shall be of neoprene.

D. Plug valves shall be furnished with a corrosion-resistant seat consisting of a welded-in overlay of high nickel content on all surfaces contacting the plug face and shall comply with ANSI/AWWA Standard C507, "Ball Valves, 6 In. Through 48 In. (150 mm Through 1200 mm)", Section 3.2.

E. Plug valves shall be furnished with replaceable, sleeve-type AISI Type 316 stainless steel bearings in the upper and lower journals, and shall comply with ANSI/AWWA Standard C507, Section 3.2.

F. Plug valve shaft seals shall be designed for replaceable, manually adjustable, multiple ring "V" or "U" type packing of Buna-N or neoprene. The valves shall be of the bolted-bonnet type and shall comply with ANSI/AWWA Standard C507, Section 3.

G. Plug valves shall have stops at the fully-opened and fully-closed positions.

H. Plug valves shall be designed for drip-tight shut-off in wet service applications at pressure differentials up the full rating of the valve with pressure in either direction. Plug valves shall be provided with a manual operator sized to suit the maximum differential pressure across the valves. Minimum plug valve operator output torques shall equal or exceed the values specified in the following table:

Plug Valve Size 150 PSI	Required Actuator 100 PSI	Output Torque
2’’	1,063 ft-lbs	1,438 ft-lbs
14’’	1,683 ft-lbs	2,225 ft-lbs
16’’	2,213 ft-lbs	3,013 ft-lbs
18’’	3,300 ft-lbs	4,500 ft-lbs
20’’	4,388 ft-lbs	5,975 ft-lbs
24’’ (100%)	10,000 ft-lbs	12,790 ft-lbs
30’’ (100%)	15,875 ft-lbs	19,550 ft-lbs

I. Manufacturer shall supply operators producing larger output torque values if so required by their valves, but in no case shall operator output torque be less than that shown for the particular valve size and pressure.

J. In addition, the operator shall be capable of withstanding an input torque of 300 ft.lbs. on the operating nuts or a pull of 200 pounds on the handwheel without damage to operator components between the input and the stops. Operators on valves 30-inch and larger shall also be equipped with an AWWA input shaft stop.

K. All external ferrous items, except cast iron, shall AISI Type 316 stainless steel. All internal and external ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.

L. Manual operators for valves 8-inch and smaller shall be lever actuated unless otherwise specified elsewhere herein.

M. Manual operators for valves 10-inch to 24-inch shall be totally enclosed worm gear type, permanently lubricated, suitable for buried and/or submerged conditions.

N. Manual operators for valves 30-inch and larger shall be totally enclosed worm gear operators, permanently lubricated, suitable for buried and submerged operation, and shall in accordance with ANSI/AWWA Standard C504, with AWWA input shaft stop.

O. Manual operators shall be provided with completely enclosed mounting brackets or adapters. The operators shall be equipped with adjustable stops to prevent overtravel in both the open and closed position with standard 2-inch square operating nuts with skirts as listed elsewhere herein, or with handwheel if for above ground service. All plug valves shall open by turning the operating nut or handwheel counterclockwise. Orient operators with horizontal plug shafts such that the plug rotates upward upon opening.

P. All operator components between the operating nut and the adjustable stops shall be designed to withstand, without damage, an input torque of 300 ft. lbs.

Q. The exterior valve surfaces shall be shop painted with two coats of asphalt varnish conforming to Federal Specifications TT-C-434A.

R. Testing: Plug valves shall be tested in accordance with ANSI/AWWA C504, “AWWA Standard for Rubber-Seated Butterfly Valves”, Section 5, Subsection 5.2. The performance test (Subsec. 5.2.1) and hydrostatic test (Subsec. 5.2.3) shall be performed as stated, however the leakage test (Subsec. 5.2.2) shall be performed bidirectionally; first on one side of the valve, and then on the other. The manufacturer shall furnish a certified test report with every valve stating that the valve has met the requirements of the tests.

S. The manufacturer shall certify that the plug valves are capable of operating in continuous duty service under these pressures and flow conditions.

T. Each valve shall by hydrostatically tested and tested for bubble tightness after the operator has been mounted and adjusted. Copies of the hydrostatic and leakage test certification and certification of conformance shall be provided to the City or designee

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall install valves with seats on the downstream side and unless shown otherwise, set valve (above 8-inch size) with the main axis of the plug horizontal.

B. All valves shall be carefully inspected, fully opened and then tightly closed and the various nuts and bolts shall be tested for tightness before installation. Special care shall be taken to prevent any foreign matter from becoming lodged in or on the valve seat. Any valve that does not operate correctly shall be removed and replaced.

C. The installation of buried eccentric plug valves shall also include furnishing and installing concrete pads and ductile iron or PVC C900 riser pipes complete with valve boxes and covers set in concrete. Each valve operator shall be supplied with an extension shaft, nut and data plate supplied by the valve manufacturer which shall be supported as previously specified and shown on the Plans.

D. The one-piece extension shaft, complete with over-torque protection device, pinned AWWA 2-inch operator nut, coupling and coupling pin, and centering identification plate, shall be installed with the valve as shown in the City Standard Details. After the exact required length of the shaft has been determined by field measurements during the installation of the valve, the shaft shall be cut to size.

E. The coupling shall be welded to the sized shaft and installed to the valve operator shaft with coupling pin. All welds shall be cleaned and covered with Carboline, Inc. Bitumastic 50, or approved equal.

F. The centering identification plate, when installed, shall rest on top of the valve riser pipe as shown on the City Standard Details with the valve data information positioned on top.

G. For all quarter-turn plug valves installed, the Contractor shall paint the underside of the valve box cover with red paint.

END OF SECTION

15130 MISCELLANEOUS VALVES

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install miscellaneous valves as shown in the drawings and as specified herein, complete and operable including accessories and, where designated, operators, all in accordance with the requirements of the Contract Documents.

1.0.2. RELATED WORK

A. Section 15095 “Valves, General”.

PART 2 – PRODUCTS

2.0.1. AIR RELEASE VALVES

A. The air release valve and flushing valve assemblies shall be installed in accordance with the details shown in the City Standard Details.

B. Taps into ductile iron pipe for air release and flushing valve assemblies shall be AWWA Tapered thread only, and the Contractor shall provide suitable equipment for this purpose as approved by the Engineer. After the tap has been made, and the corporation stop installed on a pipe conveying potable water, the inside of the pipe around the stop and the exposed exterior surfaces of the stop shall be heavily coated with Carboline Super Hi-Gard 891 White 1898, or approved equal.

For Water Mains - Air Release Valve Assemblies (ARVs):

1. The installation of air release valves shall include excavation, tapping the ductile iron pipe, corporation stop, angle valve, PVC pipe and fittings, complete with valve boxes and covers, set in concrete, backfilling and compaction, and all other appurtenant items and work in accordance with the City’s Standard Details.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene

For Sewage Mains – Automatic Air Release Valves (ARVs):

A. Sewage air release valves shall be specifically designed for use on Sewage Force Mains. Valves shall automatically release air gas or vapor under pressure during system operation, NO galvanized pipe allowed.

B. Automatic Air Release Valve Assemblies (AARVs):

1. The body of these valves shall be conical shaped to maintain maximum air gap with the spring-loaded float and seal plug connection combining to ensure no contact between the sewage and the seal.

2. The valve shall have a double float design with the upper float being enclosed in the upper section of the valve and shall be made of foam polypropylene. The lower float shall be in the main body of the valve and shall be constructed of foam polypropylene.

3. The body, cover flange, and lower flange shall be constructed of reinforced nylon, and shall have a funnel shaped lower body to automatically drain sewage back into the system.

4. All internal metal parts are to be made from corrosion resistant 316 stainless steel produced in America, with all operating parts, in the upper and lower sections, to be nonmetallic plastic/rubber materials.

5. The hinge for operation for the opening and closing of the seal on the orifice shall be made of EPDM rubber.

6. The rolling resilient seal shall provide smooth positive opening, closing, and leak free sealing over the fluctuation of pressure differentials.

7. The lower bowl of the ARV shall be funnel shaped to assure the raw sewage to run back into the pipe.

8. All hardware shall be of stainless steel 316 produced in America bolts and nuts, and the entire valve, except to upper outlet, shall be constructed of reinforced nylon material.

9. All valves shall be equipped for backflushing maintenance with easy connection or disassembly.

10. Valves with a total weight of more than 10 pounds shall be anchored to relieve the excessive weight to the saddle and pipe. Those valves weighting less than 10 pounds will not be required to be anchored.

11. The ARV shall be no taller than 19-inches. The connection on all pipelines shall be the following sizing with an isolation valve of the same size:

NOMINAL PIPE DIAMETER (INCHES)	CONNECTION
8-inch and smaller	2-inch threaded

10-inch thru 16-inch	3-inch flangle/threaded
18-inch and larger	4-inch flange/threaded

12. All air and vacuum combination release valves shall be ARI Model D-025P, or approved equal.

13. Smith Blair 317 series stainless steel tapping saddle shall be used, or approved equal.

14. Size of valve shall be calculated to meet the required flow/design conditions.

2.0.2. PLASTIC BALL VALVE

A. Plastic ball valves shall be used at all PVC pipe installations where required, and be made of polyvinyl chloride (PVC). All valves shall have manual operators, unless otherwise specified or shown.

B. Construction: All plastic ball valves shall have union ends or flanged ends to ANSI B.16.5, class 150, for easy removal. The balls shall have full size ports and Teflon seats. All body seals, union O-ring seals, and stem seals shall be Viton. The valves shall be suitable for a maximum working non-shock pressure of 150 psi at a temperature of 105°F. Body, ball, and stem shall be PVC conforming to ASTM D1784, Type 1, Grade 1. Seats shall be Teflon. O-ring seals shall be Viton. Valve ends shall be of the double-union design. Ends shall be socket welded except where threaded or flanged-end valves are specifically shown in the drawings. Valves shall have handle for manual operation.

C. Suppliers or Equal: NIBCO Inc., (Chemtrol), Watts Regulator Company, ITT Engineered Valves.

2.0.3. GLOBE VALVES

A. The globe valves for pipe 3 inches and smaller shall be handwheel operated, shall have ends threaded to American Tapered Pipe Thread (NPT) Standard, shall be designed for 150-pound working pressure and shall be bronze body equal to Crane Company No. 1, Nibco Inc., or approved equal.

2.0.4. GATE VALVES (SMALL)

A. Gate valves, smaller than 3-inches in size, unless otherwise noted on the approved Plans, shall be minimum 125 psi, bronze body, double disc, rising stems with heavy duty bronze handwheels. Valve shall have a full bore able to allow passage of a drill of the nominal valve size and be used in place of a corp. stop for tapping the main. James Jones Co. Model J-372, Stockham, Bermaid or approved equal. Ends should be as shown or indicated on the Plans. Each valve shall open by turning the handwheel counterclockwise. Valves shall be designed for at least 125 psi working pressure.

Valves with reduced bores or appreciably lighter in weight than those specified will not be acceptable.

B. See Section 15120, "Gate Valves", for gate valves not specified above.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. All valves shall be installed in accordance with Section 15095 “Valves, General.” Care shall be taken that all valves in are well supported on each end of the valve.

B. Installation of both manual and automatic air release valves shall be in accordance with the Standard Details.

C. All valves shall be installed in accordance with the Standard Details and manufacturer’s recommendations.

D. All air and vacuum release valves installed in pump stations shall have piped outlets to the nearest drain, firmly supported, and installed in such a way as to avoid splashing and wetting of floors.

END OF SECTION

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

This Contractor shall furnish all labor, material and equipment required to construct water service installations, as specified herein.

1.0.2. RELATED SECTIONS

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service
Section 15203 - Water Meter Valves

1.0.3. LEAD FREE REQUIREMENT

A. It is a requirement that all components of water service installations be certified lead free. All brass components for water service installations shall comply with the S3874 amendment (Reduction of Lead in Drinking Water Act) to Section 1417 of the Federal Safe Drinking Water Act.

B. All meters, meter accessories, copper pipe, brass pipe, fittings, corporation stops, saddles, washers, tailpieces, couplings and other appurtenant items used for water services shall be “NL” no lead Type for installation in the WASD system. Solders and flux shall contain no more than 0.2% lead.

C. All brass components shall be marked “NL” to indicate no lead.

D. All valves 2-inch and smaller shall conform to the No Lead, NL, requirement. Valves larger than 2-inches are exempt.

PART 2 – PRODUCTS

2.0.1. HDPE PIPE FOR SERVICES

A. All 2-inch high density polyethylene pipe used for services shall be IPS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 2.375-inches, minimum wall thickness of 0.264-inches, in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter". Pipe shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Pipe shall have a (natural) inner core with a blue colored outer shell. Pipe shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer

shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Pipe shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the pipe on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

B. All 1-inch high density polyethylene tubing used for services shall be CTS-O.D. Controlled with Standard Outside Dimension Ratio (SODR) of 9, pressure rating of 250 psi, nominal outside diameter of 1.315-inches, minimum wall thickness of 0.125-inches, PE 3408, all in conformance with Materials Standard PE 4710 "Polyethylene (PE) Plastic Tubing". Tubing shall conform with ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service" as modified herein. Tubing shall have a (natural) inner core with a blue colored outer shell. Tubing shall have footage marks at a maximum interval of every two feet. Polyethylene material shall have a minimum cell classification in accordance with ASTM D3350 "Polyethylene Plastics Pipe and Fitting Materials" of 445576D for the core, which shall be 100% virgin material, and 445576E for the outer shell. Note that both of these materials are UV stabilized as signified by the "D" for natural colored and "E" for the colored shell. Tubing shall conform with NSF 61 or 14. Manufacturer shall supply certification of compliance with all of the above requirements. Certification shall ship with the tubing on material sold to the Department and shall always be submitted with shop drawings and catalogue cuts. When required by the Chief, Engineering Division, Miami-Dade Water and Sewer Department or his designee, certification shall be signed and sealed by a professional engineer licensed to practice in the state in which the manufacturer is located or in the State of Florida.

C. All HDPE services require the use of a 10 gauge direct bury stranded copper blue tracer wire tapped every four feet with poly or duct tape for location purposes. The tracer wire shall be accessible at the meter box and connected to the corporation stop for continuity of the signal. The 10 AWG standard tracer wire shall have 0.030” HDPE insulation and measure 0.162” min O.D.

2.0.2. SERVICE TERMINAL FITTINGS

A. Single Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1” lock wing style valve, drilled for wire sealing, Cat. No. KV23-444W Ford Meter Box Co. or Cat. No. 14255, Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

B. Duel Meter Box Installation

1. One inch or 2-in copper or High Density Polyethylene (HDPE) tubing and terminal fittings.

2. 1" branch valve assembly, with Standard 7 ½ -in spacing between outlet centers, drilled for wire sealing, Cat. No. UV23-42W Ford Meter Box Co. or 1-in branch connection with Standard 7 ½ in spacing between outlet centers Cat. No. H-15362, fitted with angle stops for 5/8 inch meters, drilled for wire sealing, Cat. No. H-14265, (3/4' Inlet) Mueller Co.

3. C.I. cover and lid as per MDWASD Standard Details

2.0.3. CASINGS FOR TORPEDO INSTALLATIONS

A. Provide a PVC Schedule 40 casing or black steel pipe casing one inch in diameter larger than the service pipe when the service is installed with the use of a torpedo. When the service is installed by the direct bury method, no casing is required.

2.0.4. BRASS FITTINGS AND VALVES

A. All brass components shall be marked "NL" to indicate no lead.

B. Angle Key Meter Valves – Ford Meter Box Company KV-444W, Mueller or approved equal.

C. Brass Fittings – Merrit Brass or approved equal

D. Pack Joint, Swivel Nut – A.Y. McDonald Model 4761-22

E. Ball Corporation Stop – Ford Meter Box Company FB800, Mueller H-10003 or approved equal.

PART 3 – EXECUTION

3.0.4. INSTALLATION OF SERVICES

A. Services from the new water mains shall consist of corporation stops, HDPE or copper tubing and terminal fittings as shown in the Standard Details. All service installations from the new main shall be installed by the Contractor. Service installations from existing mains, if required, will be installed by Department forces, and the cost for materials and labor furnished by the Department shall be borne by the Contractor.

B. Where possible, all meter boxes shall be installed in non-traffic and non-parking areas.

C. Where meter boxes are located in existing sidewalks, the whole flag of sidewalk shall be removed and replaced with new concrete. The concrete walk shall be 4 inches thick

and finished with the proper tools and techniques to resemble the existing walk. The concrete support for meter boxes shall be eliminated when the box is installed in an existing sidewalk. Where meter boxes are located out of sidewalk areas, a concrete support is required. Concrete supports shall be to the established line and grade.

D. Meter boxes shall be set flush with the finished grade if in sidewalks, or flush with the top of the ground if out of sidewalk areas. E. All bends in copper tubing shall be made with an approved type tube bender to the satisfaction of the Department. Flattened, out of round or kinked tubing will not be permitted.

E. One inch service connections shall be one of the following:

1. Short Single - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter, to the meter installation approximately 2 ½ feet from property line. Single meter box installation included.

2. 2. Long Single - Same as above but from a main on the opposite side of the street from the proposed meter.

3. Short Dual - Consisting of a short run of HDPE or copper tubing from the main on the same side of the street as the proposed meter to the meter installation, approximately 2 ½ feet from the property line and branched off to serve an additional customer. Dual meter box installation included.

4. Long Dual - Same as above but from a main on the opposite side of the street from the proposed.

F. If PVC or black steel casing pipe for services crossing existing pavement is required, the pipe may be driven from the side of the street which affords the most room for the driving trench, thus resulting in the least number of couplings in the casing. Extra care shall be used in leveling and heading the first length of casing in the proper direction. One method of driving casing, known to work in this area and offered here as a suggestion, is to use an ordinary coupling screwed on the leading end of the casing as a cutting edge, and driving against a coupling screwed on the tailing end with a special tool in a pneumatic hammer, while maintaining a steady pull forward on the hammer with a small winch. Each length of casing as driven shall be cleaned out with compressed air introduced through a one-half-inch pipe at least as long as the casing. The purpose of driving casing pipe is to make it unnecessary to repair paving over one-inch service cuts. Should the Contractor elect to open-trench any one-inch service line across pavement, he will be required to repair the paving.

G. The Contractor shall install the meter box, 1-inch branch assembly, 30 inch tailpieces and perforated spacers.

H. When installing services the Contractor shall temporarily plug the ends of the tail pieces for protection against dirt.

I. Pipe bedding and the backfill material to at least 6 inches above the crown of the copper tubing shall be clean white masonry sand. Backfilling and compaction of material lying above a point 6 inches above the crown of the tubing and below the surface of the ground shall be as specified in Section 02315, "Trenching and Backfilling for Piping Systems".

J. Department forces will install the meters into the boxes installed by the Contractor.

END OF SECTION

PART 1 – GENERAL

1.0.4. SCOPE OF WORK

A. The Contractor shall furnish and install all concrete meter boxes, lids, sectional plates and precast vaults required for a complete installation.

B. All concrete meter boxes, sectional plates and vaults shall be in accordance with the Department's Standard Details and as specified herein.

PART 2 – PRODUCTS

2.0.1. GENERAL

All materials used in the production of the concrete meter boxes, lids sectional plates and vaults shall be new and or recent manufacture. Aggregates shall not originate in salt or brackish water areas and no calcium chloride containing admixtures shall be used.

2.0.2. FINE AGGREGATE

Fine aggregate for concrete mixes shall consist of sand or stone screening, composed of hard durable grains, free of foreign matter such as loam, clay, dirt, organic matter or other impurities. Fine aggregate shall conform to the following gradation requirements:

Size Sieve	Percent Passing
3/8"	100
No. 4	90 to 100
No. 8	70 to 95
No. 16	50 to 85
No. 30	30 to 70
No. 50	10 to 45
No. 100	0 to 10

2.0.3. COARSE AGGREGATE

A. Coarse aggregate for concrete mixes shall consist of gravel, broken stone or local limerock.

B. Coarse aggregate shall be hard, durable and free of foreign matter such as loam, clay, dirt, organic matter or other impurities. It shall be free of adherent coatings. Coarse aggregate shall conform to the following gradation requirements:

1. Meter Boxes, Lids and Sectional Plates

Size Sieve	Percent Passing

3/4"	100
1/2"	90 to 100
3/8"	40 to 70
No. 4	0 to 15
No. 8	0 to 5

2. Vaults

Size Sieve	Percent Passing
1-1/2"	100
1"	95 to 100
1/2"	25 to 60
No. 4	0 to 10
No. 8	0 to 6

2.0.4. CEMENT

A. Cement shall be a standard brand of Portland cement meeting the requirements of ASTM C150-86, "Portland Cement", Type I.

B. Different brands of cement, even if tested and approved, shall not be mixed during use.

2.0.5. REINFORCING STEEL

A. General: All reinforcing steel shall be free of rust, grease, dirt or mortar and shall be thoroughly cleaned of any such foreign matter or loose mill scale before being placed in position.

B. Wire reinforcement shall conform to ASTM A82, "Steel Wire, Plain, for Concrete Reinforcement".

C. Wire mesh reinforcement shall conform to ASTM A185, "Steel Welded Wire, Fabric, Plain for Concrete Reinforcement".

D. Bar reinforcement shall conform to ASTM A615-7a, "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement", Grade 60, deformed, except that steel manufactured by the Bessemer process will not be accepted.

2.0.6. WATER

Water used in mixing concrete that is not in the form of surface moisture on the aggregate shall be from the Department's water supply or other approved source.

PART 3 – EXECUTION

3.0.2. MANUFACTURE

A. General

All concrete meter boxes, lids, sectional plates and vaults shall be manufactured in accordance with the applicable provisions of ASTM C858, "Underground Precast Concrete Utility Structures", as modified herein.

B. Forms

1. The Forms shall be made from of a non-porous material with smooth surfaces and shall be accurate and strong enough to maintain the structure's dimensions within one half of the allowable tolerances given in Section 3.4 of ASTM C858

2. The precast sections for 4' x 4' vaults shall be constructed with a threaded metal insert in accordance with Standard Detail No. WS 2.20, Sheet 1 of 2, contained herein. Also, each section shall be furnished with a corner bolt.

F. Cleaning and Oiling: Forms shall be cleaned before each use, and shall be free of paint or other protective coatings that might cling to the surface of the concrete. Releasing agents applied to the form to aid in breaking the bond shall not be injurious to the concrete.

G. Reinforcement: Steel reinforcing shall be securely positioned in the form to maintain the concrete cover shown on the Standard Details.

H. Mixture

1. The aggregates shall be sized, graded, proportioned and thoroughly mixed in a batch mixer with proportions of cement and water that will produce a homogeneous concrete having a compressive strength of 3500 psi at 28 days of age for the boxes and plates and 3000 psi for the vaults after the same curing period.

2. Batched concrete shall be made in standard concrete mixers only, and not in mortar boxes, wheelbarrows or similar equipment.

3. Mixers shall be standard mechanical (power-driven) rotary type for concrete. Mixers normally used for mortar or plaster mixing will not be permitted.

I. Concrete Placement

1. Concrete shall be placed either by gravity into the form at a rate such that the concrete is plastic at all times and flows readily into all parts of the form and around all reinforcement steel without segregation of materials, or by highspeed pneumatic rammer resulting in sense, evenly compacted concrete without disturbing the reinforcement. The surfaces from top to bottom shall show uniform compaction.

2. The top surface of the molded items shall be flat and finished smooth while in the mold. Capping will not be permitted. Where required by the Department, corners shall be rounded.

J. Curing: Curing shall be by any method or combination of methods that will develop the required compressive strength within 28 days or less.

K. Repairs: The precast units may not be repaired without specific approval by the Department. I. Inspection: The quality of materials, manufacturing process, and the finished units shall be subject to inspection at any time by the Department, and the supplier shall afford access for this purpose, if so required.

3.0.3. CERTIFICATION

Prior to installation of any of the above mentioned units, the Contractor shall furnished the Engineer, upon his required, with a statement giving the following information:

A. Name of manufacturer.

B. The source and type of cement.

C. The source and specific gravities of the aggregates.

D. The concrete mix proportions, and strength at 28 days.

E. Name of admixtures, if any.

F. Mill certificates for the reinforcement steel.

G. Source of water.

3.0.4. REJECTION

The Precast units shall be subject to reject, either at the manufacturing plant or at delivery, upon failure to conform to any of the specified requirements herein. The following imperfections shall also be cause for rejection:

A. Defects that indicate any imperfect concrete mixing and molding.

B. Surface defects such as honey-combed or open textured and damaged area which would affect the structural adequacy.

C. Repaired areas or capping.

D. Improper radius at corners or improper tolerances.

END OF SECTION

15203 WATER METER VALVES

PART 1 – GENERAL

1.0.6. SCOPE OF WORK

This Contractor shall furnish meter valve and accessories for cold water displacement meters (to be furnished and installed by the Department) and shall supply all labor, material and equipment necessary for a satisfactory installation.

1.0.7. RELATED SECTION

Section 15202 - Meter Boxes, Sectional Plates and Vaults for Water Service

PART 2 – PRODUCTS

2.0.1. METER VALVE ASSEMBLY

A. Meter valves (inlet side of meter) for single meter box installations, including single meter boxes for multi-story buildings, shall be the lock wing type with coupling nut drilled for wire seal. The inlet end of the valve shall be for 1-inch copper tubing as specified herein, and the outlet end (coupling nut) shall connect to a 1-inch meter. The valves shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Angle Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Angle Meter Stop, No. H-14255

B. Meter valves (outlet side of meter) for single meter boxes (multi-story building) shall be the plain type with coupling nut drilled for wire seal. The inlet end of the valves (coupling nut) shall be for 1-inch copper tubing as specified herein, and the outlet end shall connect to a 1-inch meter. The valves shall be as manufactured by the following or approved equal:

Ford Meter Box. - Straight Inverted Key Meter Valves, No. KV23-444W
or
Mueller Co. - Straight Inverted Key Meter Valves, No. H-14348

C. Meter branch valve assemblies (inlet side of meter) with standard 7-1/2 inch spacing for dual meter boxes (two 5/8-inch water meters) shall be lock-wing types with coupling nuts drilled for wire seal. The inlet side of the branch valve assembly shall be for 1-inch copper tubing as specified herein, and the outlet side (coupling nut) shall connect to a 5/8-inch by 3/4-inch meter. The branch valve assembly shall be as manufactured by the following or an approved equal:

Ford Meter Box. - Branch Valve Assemblies, No. UV23-42WW

or
Mueller Co. - "U" branch connection No. H-15362 with 7-1/2 inch spacing, 3/4 I.P. male thread (outlet) and inlet for 1-inch copper tubing
and
Mueller Co. – Angle meter stops No. H-14265 with 3/4-inch I.P. female thread (inlet), and coupling nut (outlet) for 5/8-inch by 3/4- inch meter and drilled for wire seal.

END OF SECTION

15330 FIRE HYDRANTS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish and install approved fire hydrants and accessories in accordance with the requirements of this Section.

B. Where a new larger main or mains are installed as a part of the work, existing fire hydrants fed by smaller mains shall be connected to the larger main to provide maximum fire flow capability. Such re-connection shall automatically be designed by the Engineer of Record and become part of the plans and project work unless otherwise permitted by the City in writing.

1.0.2. QUALITY ASSURANCE

A. Codes: Fire hydrants shall conform with the requirements of ANSI/AWWA Standard C502, "Dry Barrel Fire Hydrants" (latest edition), as modified herein; the Miami-Dade County Fire Flow Ordinance and the Miami-Dade County Fire Department. Hydrants installed within the limits of the City of Miami shall conform to that fire department's standards.

B. Manufacturer: The hydrants shall be the standard product of a manufacturing firm which has been engaged in the production of fire hydrants for a period of at least five years.

1.0.3. INFORMATION TO BE FURNISHED BY BIDDER

A. The Contractor shall furnish four (4) sets of shop drawings for approval showing all the essential features including arrangement and descriptions of parts of the equipment offered.

PART 2 – PRODUCTS

2.0.1. APPROVED HYDRANTS

The fire hydrants shall be one (1) of the following models approved by the Miami-Dade County Fire Department:

	Model	Manufacturer
1.	A 423 Centurion	Mueller Company
2.	K81-MD (per Kennedy Drawing No. 80783 MD, Rev. 05)	Kennedy Valve
3.	Medallion #F2545	Clow Valve
4.	5-¼" B-84-B	American-Darling Co.

2.0.2. HYDRANT CHARACTERISTICS

The hydrants shall have the following features:

A. All hydrants shall meet the flow requirements of Section 2-103.21(B), Metropolitan Dade County Code. A certification for compliance with this standard must be available if requested.

B. Type of shutoff shall be compression type closing, with the line pressure, and a minimum 5- 1/4-inch valve opening.

C. Barrels - Upper barrel with breakaway-from-lower-barrel feature shall be designed with a breakable safety connection of the flange and collar bolt-connected type joining the two barrels together. Lower barrel shall be of the same material as the hydrant shoe (inlet connection), and shall be designed so that the barrel can be removed from the hydrant shoe when the shoe (and valve) are under pressure. The drain outlets normally provided shall be omitted.

D. Main valve stem - Upper stem shall have breakaway-from-lower-stem feature. Top of the lower stem shall be below the top of the lower barrel to prevent a vehicle tire from depressing the stem and opening the valve, or damaging both lower stem and lower barrel. Stem and seat removal shall be easily accomplished from the upper part of the lower barrel or the upper barrel.

E. Main valve seat ring shall be bronze threaded into a fixed bronze bushing and shall be equipped with upper and lower O-ring seals, the lower of which shall seal against the hydrant elbow.

F. Sealed lubricant reservoir shall provide lubrication to all threaded and bearing surfaces automatically, and shall be located in the bonnet. All hydrants shall be supplied with factory pre-lubrication.

G. Inlet connection - Side inlet, 6-inch mechanical joint.

H. Delivery classification - Two (2) hose and one (1) pump nozzle 18 inches above ground (bury line).

I. Hose and pumper nozzles - Threaded, with O-ring seal, and the nozzle retained by stainless steel screws, or a left hand thread lug, slot and pipe plug lock system.

Hose nozzle diameter shall be 2-1/2 inches, and threads shall be in accordance with American National Standard.

Pumper nozzle (City of Miami Standard) shall be 4-inch inside diameter, 4 and 47/64-inch outside diameter of threads, 7 threads per inch, 0.143-inch pitch, right hand, V-form threads.

Pumper nozzle (Dade County Standard) shall have 4 and ½-inch diameter threads conforming to American National Standard.

J. Bury length shall be as shown on the Plans or specified elsewhere herein.

K. Operating and cap nuts (City of Miami Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/8 inch point to flat, with operating nut weather cap.

Operating and cap nuts (Dade County Standard) shall be bronze to bronze, pentagonal, National Standard 1-1/2 inch point to flat, with operating nut weather cap.

L. Stuffing box - O-ring pressure seal.

M. Direction to open shall be counterclockwise.

N. Markings - Hydrants shall be cast marked or outside design shall be such that visible identification can be made as to manufacturer model (type). In addition, all hydrants approved as a "special" or "modified" hydrant shall be cast marked "Dade County, Florida".

O. Color shall be chrome yellow.

P. Harnessing lugs and nozzle cap gaskets will not be required.

Q. Nozzle cap chains will not be required on the "Dade County Standard" hydrants; however, they will be required on the "City of Miami Standard" hydrants.

PART 3 – EXECUTION

3.0.1. INSTALLATION

A. Six-inch branch runs to the fire hydrant shall be constructed in accordance with all applicable portions of Section 15060 "Piping and Fittings", including making thrust resistant joints, installing 6-inch gate valve, tie-rods, riser pipe and valve boxes. Where the distance of any branch run from the main shall be fifty feet or greater, it shall be constructed with 8-inch diameter piping.

B. New fire hydrants and branch runs shall be installed by the Contractor where shown on the Plans and in accordance with the Standard Details herein. Installation of a new fire hydrant shall include excavation, installation of the branch run, installation of the hydrant on the branch run, the concrete anchor at the hydrant elbow, protective concrete slab in nonsidewalk areas, replacing concrete sidewalk when in sidewalk area; steel posts filled with concrete, where required; plastic warning posts where required in FDOT right of way; backfilling and compaction. Fire hydrants shall be touched up or repainted with yellow paint, as specified, where necessary, and the same type of paint shall be used to paint the guard posts after treating the galvanized surface with a neutralizer.

C. Some fire hydrants are factory lubricated, while others require lubrication after installation. The Contractor shall verify which type of hydrant has been furnished hereunder with the Engineer, and if required, shall lubricate each hydrant after its installation and prior to its operation.

D. Lubricating hydrants will be considered as incidental to the hydrant installation, and no

extra compensation will be provided for this work. Where existing fire hydrants are removed they shall be cleaned and returned to the City of Opa-Locka Public Works Department storage yard(s), as directed by the City.

E. Fire hydrants being retired shall be salvaged by excavating the entire hydrant assembly including the bottom shoe. Using caution so as not to damage any component of the hydrant assembly, remove the entire hydrant assembly including the shoe, carefully clean of any thrust block concrete, clean, load, transport, unload and store in a Department storage yard as directed by the Engineer. Fire hydrant feed mains shall be cut, plugged and thrust blocked if they are to remain connected to an active main line. Lines which are deactivated (ie not connected to an active main) shall be abandoned or removed as called for on the Plans.

F. Unless otherwise objected by the local municipality or governing agency having jurisdiction over the work, the Contractor shall furnish and install concrete-filled steel guard post in accordance with the Standard Details.

END OF SECTION

15995 DISINFECTION OF WATER MAINS

PART 1 – GENERAL

1.0.1. SCOPE OF WORK

A. The Contractor shall furnish the necessary labor, equipment, and material to flush, clean and disinfect sections of water main and fittings as applicable to this project.

1.0.2. RELATED SECTION

A. Section 02505 “Cleaning and Testing of Main”.

1.0.3. QUALITY ASSURANCE

A. All water main pipelines shall be disinfected after they have been pressure tested and while still full of water, as specified in AWWA standard C651 latest revision and Miami-Dade County Health Department procedures.

PART 2 – PRODUCTS

2.0.1. Liquid Chlorine, available from local sources.

2.0.2. Calcium hypochlorite, HTH, Perchloron, or approved equal.

PART 3 – EXECUTION

3.0.1. GENERAL

A. The Contractor shall clean, flush and disinfect every piece of pipe, fitting and valve in accordance with these specifications and to the satisfaction of the City.

B. Liquid chlorine is available locally and shall be purchased by the Contractor.

3.0.2. DISINFECTION

A. The pipelines shall be disinfected after they have been pressure tested and while still full of water.

B. A suitable chlorinator shall be used to inject chlorine into the lines. All connections required for the introduction of chlorine into the water lines shall be made by the Contractor. Chlorine and water shall be introduced at one end and shall be allowed to flow slowly through the lines to the other end where it shall be removed and disposed of at the Contractor’s expenses. Several points of introduction and removal of chlorine solution may have to be employed to get an even distribution through the entire section being disinfected.

C. The quantity of chlorine introduced shall be such as to ensure a concentration of at least 50 parts per million in the water flowing from the line.

D. The chlorine solution shall be allowed to stand in the line for at least 24 hours or longer, if required, to destroy all harmful bacteria. At the end of the required time, the concentration of chlorine in all parts of the section shall be at least 25 ppm.

E. All valves and appurtenances in the section shall be operated at least once during the above period. After the required period, the treated water shall be thoroughly flushed from the section and the system filled with potable water.

F. The Contractor shall be responsible for coordination with Miami-Dade County Department of Health, who shall collect and test samples from main. The Contractor shall provide assistance to the Dept. of Health for the collection of samples. The samples shall be taken from each main or section of main to be placed in service where designated by the Dept. of Health. The samples must be approved by the Department of Health before the main is placed in service.

G. The Contractor shall be responsible for any rechlorination, retesting and fees that may be required until the Department of Health's approval is obtained. The Contractor shall be responsible for the disposal of all water flushed from the system and shall safeguard all adjoining properties from damage from flooding. The Contractor shall exercise due care in the protection of private property from water damage due to his operations. In addition, the Contractor shall assume complete liability for any damage which was directly or in-directly caused by his operations.

H. All of the connections shall be disinfected by the Contractor.

I. The inside of each pipe and fitting laid by the Contractor in connecting to existing mains which are isolated from the main by valves shall be swabbed with calcium hypochlorite, HTH, Perchloron, or approved equal, mixed in solution with water. The quantity of hypochlorite shall in all cases be subject to the approval of the City of Opa-Locka Public Works Department, whose representative shall be present at all times while this phase of the work is in progress.

J. Wherever practicable, water from the existing mains flowing through the disinfected connections shall be used in disinfecting the main line in order that the hypochlorite may be removed to the greatest extent possible. In other cases, the water from the disinfected connections shall be removed by allowing it to flow into the main line as it is being drained.

K. No pipe shall be placed in service until it has been disinfected as approved by the Engineering Division City of Opa-Locka and certified by the Department of Health including certified as-built drawings accepted by the City.

END OF SECTION

END OF TECHNICAL SPECIFICATIONS

PART III
PROPOSAL REQUIREMENTS

3-1 RULES FOR PROPOSALS

In order to maintain comparability and enhance the review process, proposals shall be organized in the manner specified below and include all information required herein. The proposal must name all persons or entities interested in the proposal as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to this ITB.

3-2 MINIMUM SUBMISSION REQUIREMENTS

The proposal shall be submitted on 8 ½ "x 11" paper, portrait orientation, with headings and sections numbered appropriately. Ensure that all information is written legibly or typed. The following should be submitted for a proposing firm to be considered:

3.2.1 Cover Page - Show the name of Proposer's agency/firm, address, telephone number, name of contact person, date, and the proposal number and description.

3.2.2 Tab 1 - Table of Contents
Include a clear identification of the material by section and by page number.

3.2.3 Tab 2 - Letter of Transmittal

3.2.3.1 Limit to one or two pages.

3.2.3.2 Briefly state the Proposer's understanding of the work to be done and make a positive commitment to perform the work.

3.2.3.3 Give the names of the persons who will be authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3.2.3.4 Provide an official signature of a Corporate Officer certifying the contents of the Proposer's responses to the City's Request for Proposal.

3.2.4 Tab 3 - General Information

3.2.4.1 Name of Business.

3.2.4.2 Mailing Address and Phone Number.

3.2.4.3 Names and contact information of persons to be contacted for information or services if different from name of person in charge.

3.2.4.4 Normal business hours.

3.2.4.5 State if business is local, national, or international and indicate the business legal status (corporation, partnership, etc.).

3.2.4.6 Give the date business was organized and/or incorporated, and where.

3.2.4.7 Give the location of the office from which the work is to be done and the number of professional staff employees at that office.

3.2.4.8 Indicate whether the business is a parent or subsidiary in a group of firms/ agencies. If it is, please state the name of the parent company.

3.2.4.9 State if the business is licensed, permitted and/or certified to do business in the State of Florida and attach copies of all such licenses issued to the business entity.

3.2.5 Tab 4 – Project Approach

Describe in detail the proposal to fulfill the requirements of the scope of services listed in Part II of this ITB.

3.2.6 Tab 5 – Experience and Qualifications

3.2.6.1 Specify the number of years the Proposer has been in business.

3.2.6.2 Identify the Proposer's qualifications to perform the services identified in this ITB as listed in section 2-2 of the Scope of Services.

3.2.7 Tab 6 – Schedule

3.2.7.1 Include a timetable that identifies the amount of time required to complete each component of the Program.

3.2.7.2 Indicate the earliest available start date for Proposer's project team.

3.2.7.3 Indicate the project completion date based on the date provided in 3.2.7.1.

3.2.8 Tab 7 – Pricing of Services

3.2.8.1 The fee basis should be based on the Pricing Proposal (Page 12).

3.2.9 Tab 8 – References

3.2.9.1 List a minimum of three (3) references in Florida for which the Proposer has provided Vulnerability Assessment, Adaptions and Resiliency Plan Services. Include the name of the organization, brief description of the project, name of contact person telephone number and email address.

3.2.10 Tab 9 – Additional Forms

Proposers must complete and submit as part of its Proposal all the following forms and/or documents.

- Proposer Qualifications
- Certification regarding debarment and suspension
- Drug Free workplace certification
- Non-Collusion Affidavit
- Non-Discrimination Affidavit
- E-Verification

FAILURE TO SUBMIT ALL OF THE ABOVE REQUIRED DOCUMENTATION MAY DISQUALIFY THE PROPOSER.

PART IV
EVALUATION OF PROPOSALS

4-1 SELECTION COMMITTEE

A Selection Committee, consisting of City personnel, will convene, review, and discuss all proposals submitted. The Selection Committee will use a point formula during the review process to score proposals and assign points in the evaluation process in accordance with the evaluation criteria. The Proposer shall satisfy and explicitly respond to all the requirements of the ITB, including a detailed explanation of how the services shall be performed.

Each proposal will be reviewed to determine if the Proposal is responsive to the submission requirements outlined in the Solicitation. A responsive Proposal is one which follows the requirements of this Solicitation that includes all documents submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. The Contract (s) will be awarded to the most responsive Proposer whose Proposal best serves the interest of and represents the best value to the City of Opa-locka.

4-2 EVALUATION CRITERIA

The Committee may select and choose to invite any and/or or all firms to make presentations and be interviewed by the Committee as part of the evaluation process for this Solicitation. The Committee's decision will be communicated by staff to all Proposers. The Proposer's presentation may clarify but may not modify their submitted Proposal. Any discussion between the presenter and Evaluation Committee during presentations is intended only for purposes of providing clarification in response to questions from the Committee.

4-3 ORAL PRESENTATIONS

Proposers may be required to make individual presentations to the City Selection Committee to clarify their proposals. Only those firms with the highest rated scores in accordance with the stated criteria and their weights will be invited to give oral presentations. However, the City has the right to accept the best proposal as submitted, without discussion or negotiation.

If the City determines that such presentations are needed, a time and place will be scheduled for oral presentations. Each Proposer shall be prepared to discuss and substantiate any of the areas of the proposal submitted, and its qualifications to perform the specified services. During the oral presentations, the Proposers should relate their discussion to the evaluation criteria, which will include (but not be limited to) their approach to the project. The proposed Project Manager must be in attendance.

The Evaluation Criteria may be changed for the oral presentation evaluation phase. References and site visits (if completed) shall be included in the final evaluation criteria, along with other criteria and weights as determined by the Selection Committee. Finalists will be informed as to the revised criteria, if any, prior to their oral presentation.

Additionally, prior to award of an Agreement pursuant to this ITB, the City may require Proposers to submit such additional information bearing upon the Proposer's ability to perform the services in the Agreement as the City deems appropriate.

4-4 FINAL SELECTION

The City of Opa-locka will select the firm that meets the best interests of the City. The City shall be the sole judge of its own best interests, the proposals, and the resulting negotiated Agreement. The City's decisions will be final. Following the selection of firm, the expectation is that an Agreement will be executed between both parties. City staff will recommend the award to the responsible Proposer whose Proposal is determined to provide overall best value to the City, considering the evaluation factors in this ITB.

4-5 AWARD AND CONTRACT EXECUTION

After review by the Selection Committee of the proposals and oral presentations a recommendation will be made to the City Manager for submission to the City Commission for final approval. Upon Commission authorization, contract negotiations will be initiated with the first ranked firm. If those negotiations are unsuccessful, the City will formally terminate negotiations with the first ranked firm and will commence contract negotiations with the next ranked firm, etc. Upon successful contract negotiations with the prevailing firm, the remaining firms will be notified that the process has been completed and that they were not selected.

PROPOSER QUALIFICATIONS

The Proposer, MUST hold a County and/or Municipal Contractor's Occupational License in the area of their fixed business location. The following information MUST be completed and submitted with the proposal to be considered:

1. Legal Name and Address:

   Name: _____

   Address: _____

   City, State, Zip:_____Phone/Fax: _____

2. Check One: Corporation ( ) Partnership ( ) Individual ( )

3. If Corporation, indicate:
   Date of Incorporation: _____ State in which Incorporated: _____

4. If an out-of-state Corporation, currently authorized to do business in Florida, give date of such authorization:_____

5. **Name and Title of Principal Officers** **Date Elected:**

   _____ _____

   _____ _____

   _____ _____

   _____ _____

6. The length of time in business:_____years

7. The length of time (continuous) in business as a service organization in Florida:
   _____years

8. Provide a list of at least three commercial or government references that the bidder has supplied service/commodities meeting the requirements of the City of Opa-locka ITB during the last twenty-four months.

9. A copy of County and/or Municipal Occupational License(s)

Note: *Information requested herein and submitted by the Proposers will be analyzed by the City of Opa-locka and will be a factor considered in awarding any resulting contract. The purpose is to ensure that the Contractors, in the sole opinion of the City of Opa-locka, can sufficiently and efficiently perform all the required services in a timely and satisfactory manner as will be required by the subject contract. If there are any terms and/or conditions that are in conflict, the most stringent requirement shall apply.*

CERTIFICATION REGARDING DEBARMENT, SUSPENSION PROPOSED DEBARMENT AND OTHER MATTERS OF RESPONSIBILITY

1. The Proposer certifies, to the best of its knowledge and belief, that the Proposer and/or any of its Principals:

A. Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency.

B. Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

C. Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph 1-B of this provision.

2. The Proposer has not, within the three-year period preceding this offer, had one or more contracts terminated for default by any City, State or Federal agency.

A. "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions). This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

B. The Proposer shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Proposer's responsibility. The failure of the Proposer to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Proposer non- responsive.

D. Nothing contained in the foregoing shall be construed to require the establishment of a system of records to render, in good faith, the certification required by paragraph.
(a) of this provision. The knowledge and information of a Proposer is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph 1(a) of this provision is a material representation of the fact upon which reliance was placed when making an award. If it is later determined that the Proposer knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

Signature_____

Printed Name _____

CITY OF OPA-LOCKA
DRUG-FREE WORKPLACE CERTIFICATION FORM

Whenever two (2) or more bids/proposals, which are equal with respect to price, quality, and service, are received by the City of Opa-locka for the procurement of commodities or contractual services, a bid/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).

4. In the statement specified in number (1), notify the employees that as a condition for working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction on or plea of guilty or no contest to any violation of Chapter 893, Florida Statutes or of any controlled substance law of the United States or any singular state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

This Certification is submitted by_____
(Name)

the _____ of_____
(Title/Position) (Company)

who does hereby certify that said Company has implemented a drug-free workplace program, which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.

_____ _____
Date Signature

CITY OF OPA-LOCKA NON-COLLUSION AFFIDAVIT
STATE OF FLORIDA - COUNTY OF MIAMI DADE

(1) He/She/They is/are the _____
(Owner, Partner, Officer, Representative or Agent) of
_____ the Proposer that has submitted the attached proposal.

(2) He/She/They is/are fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal.

(3) Such Proposal is genuine and is not a collusive or sham Proposal.

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from Proposing in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Proposer, firm, or person to fix any overhead, profit, or cost elements of the Proposal or of any other Proposer, or to fix any overhead, profit, or cost elements of the Proposed Price or the Proposed Price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any other of its agents, representatives, owners, employees, or parties of interest, including this affiant.

Signed, sealed, and delivered in the presence of:

_____ By: _____
Witness Signature

_____ _____
Witness Print Name and Title

NON-DISCRIMINATION AFFIDAVIT

I, the undersigned, hereby duly sworn, depose and say that the organization, business, or entity represented herein shall not discriminate against any person in its operations, activities, or delivery of services under any agreement it enters with the City of Opa-locka. The same shall affirmatively comply with all applicable provisions of federal, state, and local equal employment laws and shall not engage in or commit any discriminatory practice against any person based on race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation or any other factor which cannot be lawfully used as a basis for service delivery.

By:_____

Title:_____

Sworn and subscribed before this

_____day of_, 20___

_____
Notary Public, State of Florida

_____
(Printed Name)

My commission expires:____

E-VERIFY

Effective January 1, 2021, public and private employers, contractors, and subcontractors will be required to register with, and use the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/sub-consultants/sub-contractors) assigned by Vendor/Consultant/ Contractor to perform work pursuant to the contract with the Department. The Vendor /Consultant/ Contractor acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City; and

By entering a Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If t contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination. The Contractor acknowledges it is liable to the City for any additional costs because of termination of the contract due to the Contractor's failure to comply with the provisions herein.

E-VERIFY FORM

Definitions:

"Contractor" means a person or entity that has entered or is attempting to enter a contract with a public employer to provide labor, supplies, or services to such employer in exchange for salary, wages, or other remuneration.

"Subcontractor" means a person or entity that provides labor, supplies, or services to or for a contractor or another subcontractor in exchange for salary, wages, or other remuneration.

Effective January 1, 2021, public and private employers, contractors, and subcontractors will begin the required registration with, and use of the E-Verify system to verify the work authorization status of all newly hired employees. Vendor/Consultant/Contractor acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of:

a) All persons employed by Vendor/Consultant/Contractor to perform employment duties within Florida during the term of the contract; and

b) All persons (including sub-vendors/subconsultants/subcontractors) assigned by Vendor/Consultant/Contractor to perform work pursuant to the contract with the Department. The Vendor/Consultant/Contractor acknowledges and agrees that use of the
U.S. Department of Homeland Security's E-Verify System during the term of the contract is a condition of the contract with the City of Opa-locka; and

Should vendor become successful Contractor awarded for the above-named project, by entering this Contract, the Contractor becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. The contractor shall maintain a copy of this affidavit for the duration of the contract. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. If this contract is terminated for a violation of the statute by the Contractor, the Contractor may not be awarded a public contract for a period of 1 year after the date of termination.

Company Name: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____

ANTI-KICKBACK AFFIDAVIT

STATE OF FLORIDA)
) ss:
COUNTY OF MIAMI-DADE)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein proposed, or compensation that may be received as a result of this Proposal, will be paid to any employees of the City of Opa-Locka, its elected officials, and _____ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: _____

Title: _____

Sworn and subscribed before me this

_____ day of_____, 20____

_____
Notary Public
State of Florida at Large My

commission expires:

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM MAY DEEM YOUR PROPOSAL NON-RESPONSIVE

Sponsored By: Interim City Manager

RESOLUTION NO. 24-_____

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, APPROVING THE USE OF CITY RESOURCES TO SUPPORT THE OPA-LOCKA COMMUNITY DEVELOPMENT CORPORATION, INC'S FIVE-DAY EVENT, "THE ART OF TRANSFORMATION" (THE "EVENT") TO BE HELD ON DECEMBER 4TH - 8TH, 2024; PROVIDING FOR INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, The Ten North Group (Formerly Opa-Locka Community Development Corporation, Inc.) ("OLDC") intends to host a five-day event to highlight the transformation of the Downtown area of the City of Opa-Locka ("City"); and

WHEREAS, the event, entitled "*The Art of Transformation"* (the "Event"), is a family-friendly event that will feature interactive kid activities, music and art. It is scheduled to be held December 4th - 8th, 2024 and will be free of charge for attendees. The Event will culminate with a Grande Finale party and spiritual revival to coincide with the conclusion of the Art Basel Miami Beach; and

WHEREAS, the City seeks to provide security and permits at no cost to OLCDC for the Event; and

WHEREAS, the financial impact to the City includes the overtime cost for three police officers over five days and the forfeited revenue from permit fees; and

WHEREAS, the estimated overtime cost for seventy-five (75) police man-hours is Two Thousand, Seven Hundred Dollars ($2,700.00), which will be charged to account 26-52140 (Salaries - Overtime). The missed permit fee revenue amounts to approximately Five Hundred Seventy-Five Dollars ($575.00). Therefore, the total financial impact for the Event is estimated at Three Thousand, Two Hundred Seventy-Five Dollars ($3,275.00); and

WHEREAS, since this is a one-time event, it does not present a long-term impact on any City funds; and

WHEREAS, OLCDC seeks to serve and/or sale alcoholic beverages at the Event. The serving and/or sale of alcoholic beverages at a Special Event must be approved by the City Commission, pursuant to Article I, Section 4-15 of the City's Code of Ordinances and Resolution 21-9859; and

WHEREAS, City staff has reviewed and approved the special events permit application, along with the criteria for an exception from the prohibition of consumption of alcoholic beverages for the Event, pursuant to the City's Code of Ordinances and recommends approval; and

WHEREAS, the City Commission finds that it is in the best interests of the City to approve the Special Event Permit, attached hereto as Composite Exhibit "A" as well as the serving and/or sale of alcoholic beverages at the Event; and

WHEREAS, the City Commission finds that it is in the best interests of the City to assist OLCDC and the Event organizers with essential municipal functions and resources as described herein.

NOW THEREFORE BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA LOCKA, FLORIDA:

Section 1. The recitals to the preamble herein are incorporated by reference.

Section 2. The City Commission of the City of Opa-Locka hereby authorizes the use of City resources to provide security and permits at no cost to the Ten North Group (formerly the Opa-Locka Community Development Corporation, Inc.) in support of Ten North Group's five-day event, "The Art of Transformation", to be held on December 4th - 8th, 2024.

Section 3. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors, which do not affect the intent of this Resolution may be authorized by the Interim City Manager, following review by the City Attorney, without need of public hearing, by filing a corrected copy of same with the City Clerk.

Section 4. This Resolution shall take effect upon the adoption and is subject to the approval of the Governor or Governor's Designee.

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____

Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____
Commissioner Kelley	_____
Commissioner Williams	_____
Vice Mayor Ervin	_____
Mayor Taylor	_____

City of Opa-locka
Agenda Cover Memo

Department Director:	Gregory D. Gay			**Department Director Signature:**			
Interim City Manager:	Sha'mecca Lawson			**ICM Signature**			
Commission Meeting Date:	11.20.2024		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**		**Other**
				X			
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**		**2nd Reading**
	X		**Public Hearing:** *(Enter X in box)*		**Yes**	**No**	**Yes**	**No**
						X		**X**
Funding Source: *Account#* **:**	*(Enter Fund & Dept)* Ex: See Financial Impact section below		**Advertising Requirement:** *(Enter X in box)*		**Yes**		**No**
							X
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**				
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:**		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*		
	X		**Enhance Organizational** ■ **Bus. & Economic Dev** ☐ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐				
Sponsor Name	Interim City Manager		**Department:**		City Manager		

Short Title:

A resolution of the City of Opa-locka City Commission approving the use of City resources to support "The Art of Transformation" hosted by 'Ten North Group, Formerly the Opa-locka Community Development Corporation, Inc. (OLCDC). The event will be held December 4th - 8th, 2024 to coincide with Art Basel Miami Beach 2024.

Staff Summary:

The 'Ten North Group intends to conduct a four-day event to highlight the City's transformations in the Downtown Opa-locka area. This family-friendly event will feature interactive kid activities, music, and art. It is scheduled to be held December 4th- 8th, 2024 and will be free of charge for attendees. It will culminate with a Grande Finale party and spiritual revival to coincide with the conclusion of the Art Basel Miami Beach.

Financial Impact -The City has decided to provide security and permits at no cost to the Ten North Group. for this event. The financial impact includes the overtime cost for three police officers over four days and the forfeited revenue from permit fees. The estimated overtime cost for 75 police man-hours is $2,700, which will be charged to account 26-52140 (Salaries –Overtime). The missed permit fees revenue amounts to approximately $575. Therefore, the total financial impact for this event is estimated at $3,275. Since this is a one-time event, it does not present a long-term impact on any City funds.

Proposed Action:

Staff recommends approval of the use of City resources to support, "The Art of Transformation" hosted by the Ten North Group, Formerly the Opa-locka Community Development Corporation, Inc.

Attachment:

Special Event Permit Applications

2022

CITY OF OPA LOCKA FLORIDA

CITY OF OPA-LOCKA SPECIAL EVENT PERMIT APPLICATION

Application Fee - $100

If application is submitted fourteen (14) days or less prior to the event, Application Fee - $500

Payable only by check or money order to the "City of Opa-locka"

A Special Event Permit is required for any event held in the City of Opa-locka with more than twenty-five (25) attendees.

For processing, it is recommended that your application be submitted a minimum of thirty (30) days prior to the event; and up to forty-five (45) days if Miami-Dade Fire EMS is required. No application will be accepted less than seven (7) days prior to the event, in accordance with Parks & Recreations Department Policy for Special Events, and/or per City Ordinance 17-19

Thank you for selecting the City of Opa-locka as the site for your special event. The information requested in this application will be used to determine your eligibility for a permit to conduct your proposed event. Please note that submission of your application should in no way be construed as final approval of your request; it is considered a request for a permit only. In order to issue a Special Event Permit, all fees must be paid and all required insurance certificates and permits must be obtained and submitted.

Please answer all questions, printing clearly. Attach the mandatory parking plan and site plan that includes the layout of the event. Depending on the type of event, you may also need to complete additional attachments. Attach additional sheets as needed to clearly describe your event. Any misrepresentation of information in this application or deviation from the final permit conditions may result in the immediate revocation of the event permit.

This application will be distributed to City departments that will be involved in permitting and/or supporting the event described in this application. The departments will review the application in order to determine required conditions, estimated cost of City support services (if needed), and permits that will be required. As the applicant, you will be responsible for providing, prior to the event, any necessary insurance certificates and prepayment of fees for any City services that will be required. After your event, you will be responsible for paying the City of Opa-locka for the actual cost of City services.

CITY OF OPA LOCKA FLORIDA

For office use only

☐ Permit issued: # _____ Staff initials_____

SPECIAL EVENT APPLICATION

Please return the completed application and detailed description of the event on your organization's letterhead and site map to: CITY OF OPA-LOCKA, 780 FISHERMAN STREET, OPA-LOCKA, FL 33054 ATTN: CITY MANAGER'S OFFICE - SPECIAL EVENTS REVIEW COMMITTEE
Please fill out this application completely.

Are you requesting a fee waiver for City facilities and services? ☑ Yes ☐ No

Forms Required Checklist
1. ☑ Completed Application
2. ☑ Proof of Organization Identification - from the State of Florida
3. ☑ Detailed Description of Event (1 page) ON BUSINESS/ORGANIZATION LETTERHEAD.
4. ☑ Proof of Insurance or quote for special event insurance.
5. ☑ Layout map - must be computerized (not handwritten)
6. ☑ Tent Permit (required for any tents larger than 10 x 10) application in the Building & Licensing Dept.
7. ☑ Map of cross streets and road closures.
8. ☑ Proof of liquor license (if serving alcohol) – this requires City Commission approval
9. ☑ Proof or Worker's Compensation (for organizations with 4 or more employees)

EVENT

Event Name: Art of Transformation

1. **Requested Location:** 650 Ali Baba Avenue, 675 Ali Baba Avenue, 757 Ali Baba Avenue, 490 Opa Locka Boulevard

Alternate Location (if requested location is not available): _____

2. **Date:** 12/4/2024 **Rain-Out or Alternate Date (If date requested is not available):** _____

If more than one (1) day please specify: Day 1: 12/4/2024 _____ **Day 2:** 12/8/2024

3. **Actual Event Start Time: Begin:** 11:00am **End:** 10:00pm
4. **Set-up Date:** Lot Preparation 11/11/2024 **Set-up Time:** _____
5. **Breakdown Date:** 12/10/2024 **Breakdown Completion Time:** 12/15/2024
6. **Estimated amount of people attending:** _____
7. **Type of Event: check all that apply**

☐ Award Show	☑ Festival	☐ Religious
☑ Community Event	☐ Fund-Raiser	☐ Sporting Event
☐ Concert/Performance	☐ Parade	☑ Other Art Exhibition
☐ Fair/Carnival	☐ Political	

Please also provide a detailed description of your event ON YOUR ORGANIZATIONS LETTERHEAD.

8. **Number of times this event has taken place in the City of Opa-locka:** 2022-2023
9. **Was this event presented in other cities? ☐ Yes ☑ No**
   - **If yes, what cities:** _____
10. **References:**

Name: _____ **Phone:** _____ **Email:** _____

Name: _____ **Phone:** _____ **Email:** _____

ORGANIZATION

What type is your organization: **Please check all that apply.**

☐ For Profit ☑ Non-Profit ☐ Governmental ☐ Neighborhood Association ☐ Other: _____

Name: Ten North Group (Formerly Opa Locka Community Development Corp)

Address: 490 Opa Locka Blvd. Suite 20

City: Opa Locka **State:** FL **Zip:** 33054

Phone: 305-687-3545 **Fax:** _____ **E-Mail:** luis@tennorthgroup.com

Contact person's name: Luis Quinones

Phone: _____ **Cell:** 754-581-6492 **E-Mail:** luis@tennorthgroup.com

Alternate contact person: James Nixon

Phone: _____ **Cell:** 229-848-0117 **E-Mail:** james@tennorthgroup.com

Please provide the City of Opa-locka with a copy of one of these identifications:

☐ Valid Florida Driver's License ☑ 501(c) (3) ☐ Business Identity.

LOGISTICS

11. Will you require road closure? ◯ Yes ⊗ No

If yes, please describe what streets you want closed and the closing and opening dates / times.

- _____ **Street (s) from:** _____ **to:** _____

  Closure date: _____ **Time:** _____

- **Opening date:** _____ **Time:** _____

A computerized map/architectural siteplan attached showing cross streets and location of proposed venue; along with staging set up and full logistical set-up must be included in your packet.

County roads require a permit from Miami-Dade County (305-375-2030). The Florida State Department of Transportation (FDOT) requires that event organizers obtain a permit for the closure of all state roads. This permit must be filed with FDOT thirty (30) days prior to the event date. Please contact call 305-654-7163 to obtain the application for closing or use of state roads. The applicant may be required to contact residents or businesses along the closure route and have them sign a petition. Local roads will be closed with City Manager approval (Ord._____)

12. Approximate number of vehicles anticipated: _____

13. Will you be securing your event with fencing? ⊘ Yes ◯ No

14. Will you need trash removal? ◯ Yes ⊘ No

- **If yes, how many dumpsters?** _____ **How many pick ups?** _____

Note: Hiring of City services for trash removal is required.

15. Are you requesting use of the City or County's Showmobile? ◯ ☐ Yes ☑ No

Use of Showmobile will require a non-waivable fee to cover cost of set up and breakdown. This fee cannot be waived.

16. Will you require temporary electrical work? ⊘ Yes ◯ No

- **If yes, please provide electricians name:** Richard Way Jr.

- **Business Name:** Sky Electric Inc **Phone:** 305-542-0060

(Note: The electrician you hire needs to apply for a permit through the City of Opa-locka.)

LOGISTICS

17. Will you be erecting the any of the following?

	Yes	No	How Many	Size / Dimension
Tent	☑	☐	1	82'x48'
Ticket Booth	☐	☑		
Staging	☐	☑		
Dance Floor	☐	☑		
Other Temporary Structure	☐	☑		

Note: Tent permits are required for tents larger than 10' x 10'.

(Please include these items on your site map and provide the City a detailed floor plan for the event.)

18. Will your event include any of the following?

☐ **Fireworks** ☐ **Games for children** ☐ **Mechanical / Amusement Rides**

- **If yes, please provide a detailed description:** _____

- **Company Name:** _____
- **Insurance Carrier:** _____

  Agents Name: _____ **Phone:** _____

Note: All amusement rides must be approved by the state. All carnival, amusement or carnival type events shall provide the required insurance policy or policies as stipulates by the City of Opa-locka and must get proper permits from the City's Building and Licensing Department.

19. Will music be played? ☑ **Yes** **No** **If yes, what type?**

Name of Sound Company: _____

Address: _____ **Phone:** _____

(Foul language, offensive materials, strippers, erotic dancers or lewd or lascivious behavior is PROHIBITED. All music events must end at 11pm, unless approve by City Commission and/or City Manager's Office)

SAFETY

20. List the beverages to be served: spirits, wine, champagne, soft drinks

(Note: Beverages must be dispensed in soft containers. No glass containers or cans allowed.)

21. Will alcohol be served? ☑ **Yes** ☐ **No**

If yes, what type: spirits, wine, champagne

Sale and/or distribution of alcoholic beverages including beer and wine must be approved by the City Commission. Upon approval, the organization must apply for a temporary liquor license from the State of Florida, Division of Alcoholic Beverages and Tobacco under Florida Statute 561.42. Contact the County office at 305.470.6783 for instructions on obtaining this License.

22. Will Food be served? **Yes** ☐ **No** ☑ **If yes, what type?** _____

SAFETY

RISK

Please note: Sanitary and food facilities shall be provided by the Licensee in accordance with applicable laws and regulations of the Department of Business and Professional Regulation (Form DBPR HR-7029, Division of Hotels and Restaurant Application for Temporary Event Vendor License). Licensee agrees to ensure that any and all grease remaining after the event by food vendors shall be properly disposed of in accordance with any applicable standards. In the event Licensee fails to properly dispose of the grease, the City will charge Licensee for the cost incurred by the City to do so.

CONCESSIONAIRE RIGHTS: Licensee shall have exclusive concessionaire rights within the permitted area.

23. **You are required to hire City of Opa-locka Police for your event.**

The Police Department determines how to staff the event with off-duty officers for crowd, traffic or other public safety concerns. The police department will inform you of the number of officers needed. Staffing is larger for events that serve alcohol and/or close roadways. PLEASE CALL 305-953-2868 for more information on off-duty officers.

24. **You may be required to hire EMS to be on-site at your event. This will be provided by Miami-Dade County Fire Rescue. Their review process is 30-days. The City of Opa-locka Special Events Committee will advise you accordingly.**

Prior to the commencement of any event, the City of Opa-locka requires organizers of the special event to provide the City with a valid certificate of insurance showing:

General Liability Insurance:	$1,000,000 minimum combined single limit for bodily injury and property damage.
Liquor Liability Insurance:	$1,000,000 minimum limit, if alcoholic beverages are being served or sold at the event.
Workers' Compensation	Statutory coverage.
Employers' Liability:	$500,000 / accident / disease / policy limit.

Proof of workers' compensation coverage is required from employers with four (4) or more employees.

- All Certificates of Insurance shall include a description of the special event, event location and event date(s).
- All liability policies shall be issued by an "A" rated or better insurance carrier, endorsed by A & M Best and authorized to transact business in the State of Florida.
- **The City of Opa-locka must be named additional insured on all liability policies.**
- The issuing insurer shall endeavor to notify the City of Opa-locka of any policy cancellation by mailing 10 days written notice to the City prior to issuance of a cancellation notice.
- All special event organizers shall indemnify and save the City of Opa-locka harmless from any and all claims, suits, actions, damages or causes of action arising as a result of the special event.

Sign here to verify you have read the entire event application and conditions.

~~Jeff Bridges~~ JAMES A. NIXON
Print Name

Signature

10/27/2024
Date

revised 12/15/2021 aar

PLEASE NOTE
Forms 1 - 4 are mandatory upon submission of application.
Please also provide a detailed description of your event ON YOUR ORGANIZATIONS LETTERHEAD.

Permit # _____

Permit name: _____

_____

Date of event: _____

OFFICE USE ONLY

Approval Signatures Required:

_____

Director of PCD

_____

Building Official

_____

Code Enforcement

_____

Police Commander

_____

Park and Recreation Director

_____

Public Works Director

_____

Fire Marshall, MDC

_____

City Manager

State of Florida
Department of State

I certify from the records of this office that OPA-LOCKA COMMUNITY DEVELOPMENT CORPORATION,INC. is a corporation organized under the laws of the State of Florida, filed on May 5, 1981.

The document number of this corporation is 757835.

I further certify that said corporation has paid all fees due this office through December 31, 2024, that its most recent annual report/uniform business report was filed on January 30, 2024, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Twenty-second day of April, 2024

Secretary of State

Tracking Number: 7639786818CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication



Detail by Entity Name

Florida Not For Profit Corporation
OPA-LOCKA COMMUNITY DEVELOPMENT CORPORATION,INC.

Filing Information

Document Number	757835
FEI/EIN Number	59-2106635
Date Filed	05/05/1981
State	FL
Status	ACTIVE
Last Event	RESTATED ARTICLES
Event Date Filed	04/15/2002
Event Effective Date	NONE

Principal Address

490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Changed: 04/09/1992

Mailing Address

490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Changed: 04/09/1992

Registered Agent Name & Address

C T CORPORATION SYSTEM
1200 SOUTH PINE ISLAND ROAD
PLANTATION, FL 33324

Name Changed: 04/28/2022

Address Changed: 04/28/2022

Officer/Director Detail

Name & Address

Title P

LOGAN, WILLIE
490 OPA LOCKA BLVD., #20
MIAMI, FL 33054

Title Chairman of the Board

SABIR, NASHID
490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Title CFO, COO

Bridges, Jeff
490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Title Officer

Nixon, James
490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Annual Reports

Report Year	Filed Date
2023	03/28/2023
2023	06/14/2023
2024	01/30/2024

Document Images

01/30/2024 -- ANNUAL REPORT	View image in PDF format
06/14/2023 -- AMENDED ANNUAL REPORT	View image in PDF format
03/28/2023 -- ANNUAL REPORT	View image in PDF format
04/28/2022 -- ANNUAL REPORT	View image in PDF format
03/30/2021 -- ANNUAL REPORT	View image in PDF format
01/30/2020 -- ANNUAL REPORT	View image in PDF format
01/28/2019 -- ANNUAL REPORT	View image in PDF format
05/16/2018 -- AMENDED ANNUAL REPORT	View image in PDF format
01/25/2018 -- ANNUAL REPORT	View image in PDF format
01/12/2017 -- ANNUAL REPORT	View image in PDF format
01/14/2016 -- ANNUAL REPORT	View image in PDF format
01/16/2015 -- AMENDED ANNUAL REPORT	View image in PDF format
01/15/2015 -- ANNUAL REPORT	View image in PDF format
01/30/2014 -- ANNUAL REPORT	View image in PDF format
01/03/2013 -- ANNUAL REPORT	View image in PDF format
01/07/2012 -- ANNUAL REPORT	View image in PDF format
07/21/2011 -- ANNUAL REPORT	View image in PDF format
05/23/2011 -- ANNUAL REPORT	View image in PDF format
02/02/2011 -- ANNUAL REPORT	View image in PDF format

02/25/2010 -- ANNUAL REPORT	View image in PDF format
04/07/2009 -- ANNUAL REPORT	View image in PDF format
01/31/2008 -- ANNUAL REPORT	View image in PDF format
07/20/2007 -- ANNUAL REPORT	View image in PDF format
05/01/2006 -- ANNUAL REPORT	View image in PDF format
05/03/2005 -- ANNUAL REPORT	View image in PDF format
04/07/2004 -- ANNUAL REPORT	View image in PDF format
02/24/2003 -- ANNUAL REPORT	View image in PDF format
04/15/2002 -- Restated Articles	View image in PDF format
04/12/2002 -- ANNUAL REPORT	View image in PDF format
06/22/2001 -- Amendment	View image in PDF format
05/17/2001 -- ANNUAL REPORT	View image in PDF format
05/12/2000 -- ANNUAL REPORT	View image in PDF format
05/04/1999 -- ANNUAL REPORT	View image in PDF format
04/27/1998 -- ANNUAL REPORT	View image in PDF format
05/19/1997 -- ANNUAL REPORT	View image in PDF format
05/01/1996 -- ANNUAL REPORT	View image in PDF format

Florida Department of State, Division of Corporations

APPLICATION FOR REGISTRATION OF FICTITIOUS NAME

REGISTRATION# G23000012428

Fictitious Name to be Registered: TEN NORTH GROUP

Mailing Address of Business: 490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054

Florida County of Principal Place of Business: MIAMI-DADE

FEI Number:

FILED
Jan 26, 2023
Secretary of State

Owner(s) of Fictitious Name:

OPA-LOCKA COMMUNITY DEVELOPMENT CORPORATION, INC.
490 OPA-LOCKA BOULEVARD, SUITE 20
OPA LOCKA, FL 33054 US
Florida Document Number: 757835
FEI Number: 59-2106635

I the undersigned, being an owner in the above fictitious name, certify that the information indicated on this form is true and accurate. I further certify that the fictitious name to be registered has been advertised at least once in a newspaper as defined in Chapter 50, Florida Statutes, in the county where the principal place of business is located. I understand that the electronic signature below shall have the same legal effect as if made under oath and I am aware that false information submitted in a document to the Department of State constitutes a third degree felony as provided for in s. 817.155, Florida Statutes.

WILLIE LOGAN — 01/26/2023
Electronic Signature(s) — Date

Certificate of Status Requested ( ) **Certified Copy Requested ( )**

Ten North Group™
Formerly OLCDC

Presents

BLACK ALIVENESS: AN AESTHETICS OF BEING

2024 Art of Transformation on Miami Art Week /Art Basel



Architectural rendering of the soon-to-be Opa Locka Town Center by Ten North Group

The 2024 edition of the Art of Transformation exhibition continues the exploration of the interrelations between words and image-making in the Black world. It builds on the work of African American scholar Kevin Qashie, *Black Aliveness or a Poetics of Being* (2021), Duke University Press, which pairs Black texts with image-making by artists from the Black world. As African and African Diaspora writings are debated, contested, legislated, and outright banned, it is worth considering how the Black world conceives and uses literature and image-making to construct an autonomous field.

December 4th –8th 2024
Opa Locka, Florida

www.thetennorthgroup.com

A Word from The President

Introducing the Annual Art of Transformation (AOT) organized by the Ten North Group during Miami Art Week, which coincides with the world-renowned Art Basel Miami, is always a pleasure.

The 2024 edition, *titled Black Aliveness and the Aesthetics of Being*, builds on Kevin Quashie's book, *Black Aliveness, or A Poetics of Being* (2021. Duke University Press).

Our choice to link African and African Diaspora theoretical and literary works to visual expressions is not fortuitous. Since the arrival of Africans in the Americas, literature has been a specific and highly valued form of intellectual activity. Together with visual representations, they are the primary vehicles for making history and decentering knowledge. Hence, the five-year series of selection of a literary work by an African/Diaspora word-maker as a site for investigation by visual artists. After the *Fire Next Time* (2021) by James Baldwin, *The Beautiful Human Love*(2022) by Jacques Stephen Alexis, and *I've Known Rivers* (2023) by Langston Hughes, the 2024 edition continues the linking of Black texts to image making through exploration of the aesthetics potential of *Black Aliveness, or A Poetics of Being.*

Black Aliveness: An Aesthetics of Being allows us to expand the practice of Diaspora to reach new heights through exhibitions, performing arts, moving images, and conversations on contemporary issues affecting the Black World.

Willie Logan, Ph.D., President & CEO Ten North Group
Founder, *The Art of Transformation*

Black Aliveness and the Aesthetics of Being

Conceptual note

The 2024 edition of "The Art of Transformation" explores the interrelationships between literary production and visual arts in the black world. This year, it focuses on the work of African American scholar Kevin Qashie: *Black Aliveness or a Poetics of Being* (2021), Duke University Press. This edition continues our endeavor of linking black texts to visual arts by artists from the Black world. As African and Diaspora writings are debated, contested, legislated, and firmly banned, reflecting on how the Black world conceives and uses literature and visual arts to build an autonomous field is appropriate.

Qashie argues that "in a normal state of "being black," one must be able to be inspired, moved, amazed, and dream...!" The texts and images emphasize the aesthetics of the things created, their manner and forms, their poetics, their effects, and effects rendered through language and plastic expressions. The terms of aesthetics sometimes seem opposed to racialist issues as if blackness were formless, as if aesthetic discourse were against the political contexts of Black peoples' arts.

"Racial formations are an aesthetic phenomenon, and aesthetic practices are racialized structures." Thus, trying to segregate aesthetics from politics means misunderstanding the mutual conditions that support the practices of representation. *Aliveness and the Aesthetics of Being* is then "aesthetics as a form of life, aesthetics as a schema for considering the liveliness of the phenomenon and the phenomenon of liveliness, the quality of light by which we scrutinize our lives". In connecting aesthetics to liveliness, the 2024 edition turns to the capacities for animation evident in the art object for a call for "an antiracist politics that moves beyond reactive dialectics and representational strategies to something else, experimenting with duration, sensation, resonance, and affect---a commitment to sensibility".

How do artists of African descent create modes of intervention no longer predicated upon reactive dialectics? How have they provided a counter-narrative of radical autonomy unfazed by merely restating the tacit necessity of the place of art in society? *Aliveness and the Aesthetics of Being* is about a textuality and materiality of being black and becoming. "Black liveliness belongs to the open totality of knowledge--- the rich diversity of Black peoples and the practice of its exhibitions, which locates heterogeneity through a work in time, in the globalities of its being". The 2024 edition spreads out and approaches the experience of Being. It aestheticizes and contemplates the trill of inhabiting liveliness.

To attend to these upheavals — political, cultural, economic, and ethical — *Aliveness and the Aesthetics of Being* argues for a move beyond outdated unicentric discourses to present productions dedicated to fostering anew various loci of affiliation away from the romantic illusion of pure distance and total autonomy of Art from society. By these means, *Aliveness and the Aesthetics of Being* re-inscribes the imbrication of artistic practice in social temporality.

Black Aliveness and the Aesthetics of Being is not a return to reductive essentialism but rather a pegging to the depth of blackness as a spatial and temporal strategy of resistance insisting on it as the past, present, and future to highlight Black aesthetics' continuing times of entanglement with dominant representations.

Here, the attempt is to think of linkages between the political and the imaginary beyond the simplistic valorization of the former and the equally simplistic condemnation of the latter. The two dimensions of the political and the imaginary, with their libidinal content, have specific figurations in the works by artists assembled in this 2024 edition because there is no imaginary without a political-sociological context.

The works in this 2024 edition attempt to highlight the exquisite productions by artists from the Black World and their attempts to stay with their version of the human question: how to be? For Qashie, "this question cannot be asked from a place of deficit, has no predetermined answer, and cannot be satisfied by identity. It must be pursued on the grounds of the grace of one's capacity.

Black Aliveness and the Aesthetics of Being

@ The Ten North Campus—a cluster of buildings about 60 feet ones from the others:

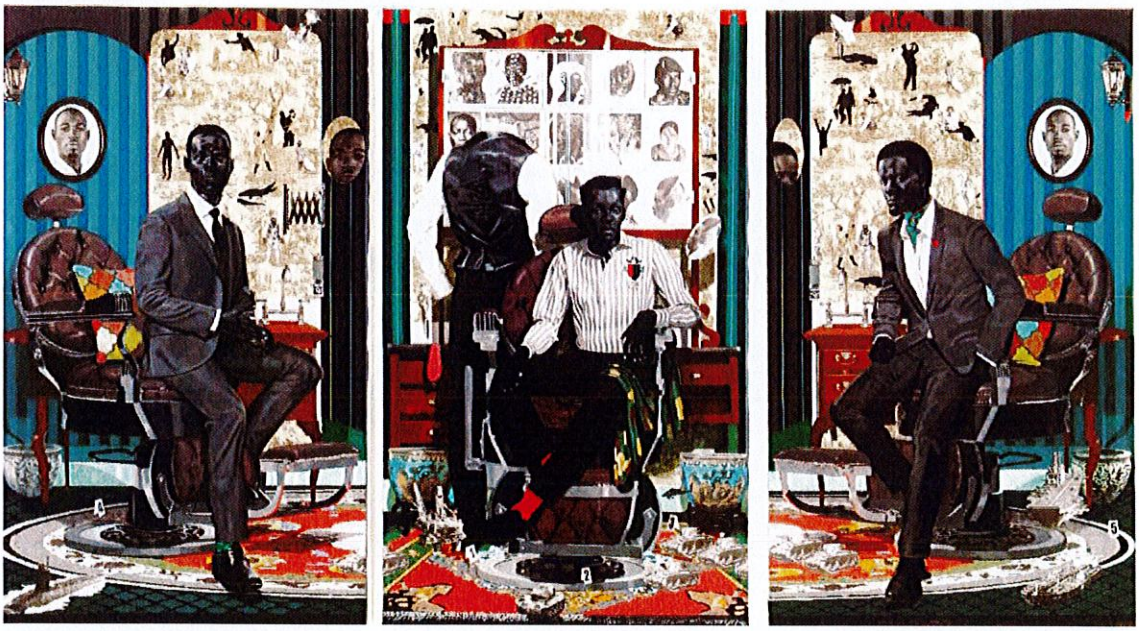
Exhibitions

The 2024 edition is structured around five significant exhibitions, continuing our striving for renewal of the Pan African ideals and expression of our autonomous presence in a rapidly changing art world.

Jamaica on My Mind: *Aliveness and Levity*

@ The Invited Country's Pavilion

Curated by Phillip Thomas, Professor, Edna Manley School of Art, Kingston, Jamaica



Phillip Thomas, *The Barber Shop* (2023). Acrylic on canvas, 48" x 30". Collection Ten North

This exhibition brings a generation of 15 artists living on the island and from the Diaspora. *"Aliveness and Livity"* is the perception of a moment of accomplishment, an instant in which what has matured in the alchemical athanor metamorphoses into perfection or, rather, an epiphany or an event---an accomplishment. It is an idea of the individual's transformation and emancipation as the result of her/his molting toward a new being and the time of accomplishment that opens the pathway to a new era in which the individual *re*thinks his/her relationship with others and how to *re*articulate his/her presence in the world.

Embodiment of Aliveness: The Sculpture of Siriki Ky
@ The Art and Recreation Center (ARC)

Curated by Dr. El Hadji Malick Ndiaye, Director, Museum of the Institute of Fundamental Africa, Curator, African Contemporary Art Biennale Dakar, Senegal (2022).



Siriki Ky, *Africa faces its Destiny* (2021). Welded iron, dimensions variable. Collection Ten North Group

Ky's sculpture emerges from the depth of Africanness as a spatial and temporal strategy of resistance, insisting on it as the past, present, and future to highlight African aesthetics' "times of entanglement" with dominant representations. The work thinks of political and imaginary linkages beyond the simplistic valorization of the former and the equally simplistic condemnation of the latter. The two dimensions of the political and the imaginary, with their instinctual content, have specific figurations in the articulations because there is no imaginary without a political-sociological context.

Under the Bridge, Beyond the Beach, Above the Muck: Snapshots from the Ten North Collection

@ The Train Station



The Ten North's collection is unique in its approach, embodying and enacting black memory principles. It serves as a locus of memory, a landmark around which past events structure present memory. This distinctive approach provides an alternative model, operationalizing a process that offers an architecture of memory and a metonymic model for consciousness. Within this model, historical facts are selectively preserved and positioned to enable renewal.

And Is: The Black Florida Project

The Photography of Johanne Rahman

@ The Hurst Building

Curated by Melissa Hunter Davis, Director, Editor, Sugarcane Magazine



Elizabeth Alexander argues that "Black creativity emerges from a long series of innovative responses to the death and violence that afflict our communities." *And Is: The Black Florida Project* by Johanne Rahman traces this evolution in a documentary focusing on black communities in Florida.

And Is explores the shifting urban and rural landscapes occupied by Black communities throughout the State of Florida. Rahman underscores the urgency and importance of recording neighborhoods in a shifting dynamic flux through environmental, landscape portraits, and architectural images. Paralleling her hometown--- the often-stigmatized Laventille Hills neighborhood of Trinidad and Tobago, the artist articulates a "practice of Diaspora," understanding and documenting these communities that echoes in a call and response to offer an alternative view of working-class Black neighborhoods as a sense of place. The works in this exhibition illustrate the artist's creative uses of photography to resist colonization, inequality, disenfranchisement, and brutality.

Site Memory: The Sculpture garden

@ The VFW Garden

Curated by James Brazil's Studio

The lot on which the Veterans of Foreign Wars building once stood is transformed into a sculpture garden by Australian landscape architect James Brazil.



Site Memory provides a model for understanding how African Diaspora mnemonics generate the semantic dynamism and social construction of historical thought. The life size sculptures tucked in the maze of larges printed book covers by African Americans writers banned by the state of Florida title Required Readings in a luxurious vegetation provide a "topoi" construction that is place and topic where memories converge.

James Brazil Site provides a model for understanding how African Diaspora mnemonics generate the semantic dynamism and social construction of historical thought. Thus, *Site Memory* can then be 'read' as a psychological diagram of the African Diaspora subconscious.

Black Aliveness and an Aesthetics of Being

Surrounding Programs

New Times of entanglement: A Conversation with Kevin Quashie, Author, *Black Aliveness or a Poetics of Being* (Tentative)

The conversation explores the notion of Blackness in relation to the rhetoric of the "post" and "De" in ways in which the latter may appear as just a "synchronic monoculturalism"— a tacit regurgitation of the old false universalism of Europe and its diachronic evolutionism.

Panel 1. Jamaica on my Mind
Phillip Thomas, Chair

Exhibitions recounting the history of Jamaican contemporary arts can explore its political, social, and economic dimensions. They provide a reading of Jamaica's preoccupations and projections to the future. Around the curator, artists, critics, and scholars engage in narrativizing processes that testify to the evolution of the arts and the maturity of the ideas they develop.

Panel 2. Contemporary Art, Contemporaneity and the Black World: Rethinking the Aesthetic Cartography

A Conversation with Dr. Malick Ndiaye and Siriki Ky

Rethinking knowledge on African and African Diaspora Arts to better apprehend the logics of artistic creation about translation, conditions of knowledge productions and the supports attached to them are crucial in the development of new cultural policies. The panels in this theme not only explore the art and history in the Black World, but also pave the way for potential transformative impacts.

- **Evening Performing Arts**
- **Fashion Design**
- **Films Projection**

Ten North Group™
Formerly OLCDC

Creating Stronger Communities Since 1980

Our mission is to transform lives by providing equitable access to housing and wealth-building opportunities for under-resourced communities, particularly those affected by systemic bias. Over the last 40 years, OLCDC (now Ten North Group) has been a leading force in shaping our community. Our comprehensive approach to community and housing development has helped us become one of Florida's most prominent and respected CDCs (Community Development Corporations).

Ten North Group accomplishes its mission by owning, developing, and managing affordable housing and creating opportunities for home ownership. In addition, Ten North Group builds communities through its social, educational, and financial programs, which have, to date, served close to 4,000 youths, 6,250 children and families, and close to 2,500 first-time home buyers. Ten North Group's CDFI has provided loans and technical assistance to over 1,500 small business owners and entrepreneurs. The ten North Group's Art Foundation, a key part of our holistic approach, uses the arts and culture to write future stories of previously overlooked places.

490 Opa-locka Blvd, Ste. 20

Opa-locka, Florida 33054

Tel. (1) 305 687 3545

Email: Logan@tennorthgroup.com

www.thetennorthgroup.com

Notes

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To attend to these upheavals — political, cultural, economic, and ethical — *Aliveness and the Aesthetics of Being* argues for a move beyond outdated unicentric discourses to present productions dedicated to fostering anew various loci of affiliation away from the romantic illusion of pure distance and total autonomy of Art from society. By these means, *Aliveness and the Aesthetics of Being* re-inscribes the imbrication of artistic practice in social temporality.

Black Aliveness and the Aesthetics of Being is not a return to reductive essentialism but rather a pegging to the depth of blackness as a spatial and temporal strategy of resistance insisting on it as the past, present, and future to highlight Black aesthetics' continuing times of entanglement with dominant representations.

Here, the attempt is to think of linkages between the political and the imaginary beyond the simplistic valorization of the former and the equally simplistic condemnation of the latter. The two dimensions of the political and the imaginary, with their libidinal content, have specific figurations in the works by artists assembled in this 2024 edition because there is no imaginary without a political-sociological context.

The works in this 2024 edition attempt to highlight the exquisite productions by artists from the Black World and their attempts to stay with their version of the human question: how to be? For Qashie, "this question cannot be asked from a place of deficit, has no predetermined answer, and cannot be satisfied by identity. It must be pursued on the grounds of the grace of one's capacity.

Black Aliveness and the Aesthetics of Being

@ The Ten North Campus—a cluster of buildings about 60 feet ones from the others:

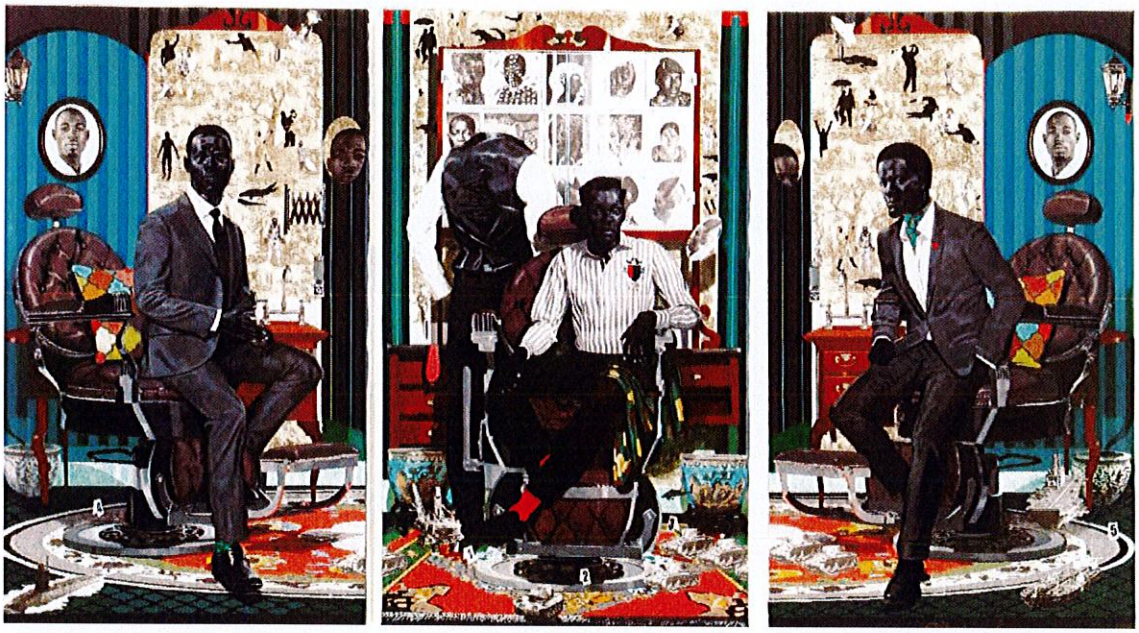
Exhibitions

The 2024 edition is structured around five significant exhibitions, continuing our striving for renewal of the Pan African ideals and expression of our autonomous presence in a rapidly changing art world.

Jamaica on My Mind: *Aliveness and Levity*

@ The Invited Country's Pavilion

Curated by Phillip Thomas, Professor, Edna Manley School of Art, Kingston, Jamaica



Phillip Thomas, *The Barber Shop* (2023). Acrylic on canvas, 48" x 30". Collection Ten North

This exhibition brings a generation of 15 artists living on the island and from the Diaspora. *"Aliveness and Livity"* is the perception of a moment of accomplishment, an instant in which what has matured in the alchemical athanor metamorphoses into perfection or, rather, an epiphany or an event---an accomplishment. It is an idea of the individual's transformation and emancipation as the result of her/his molting toward a new being and the time of accomplishment that opens the pathway to a new era in which the individual *re*thinks his/her relationship with others and how to *re*articulate his/her presence in the world.

Embodiment of Aliveness: The Sculpture of Siriki Ky
@ The Art and Recreation Center (ARC)

Curated by Dr. El Hadji Malick Ndiaye, Director, Museum of the Institute of Fundamental Africa, Curator, African Contemporary Art Biennale Dakar, Senegal (2022).

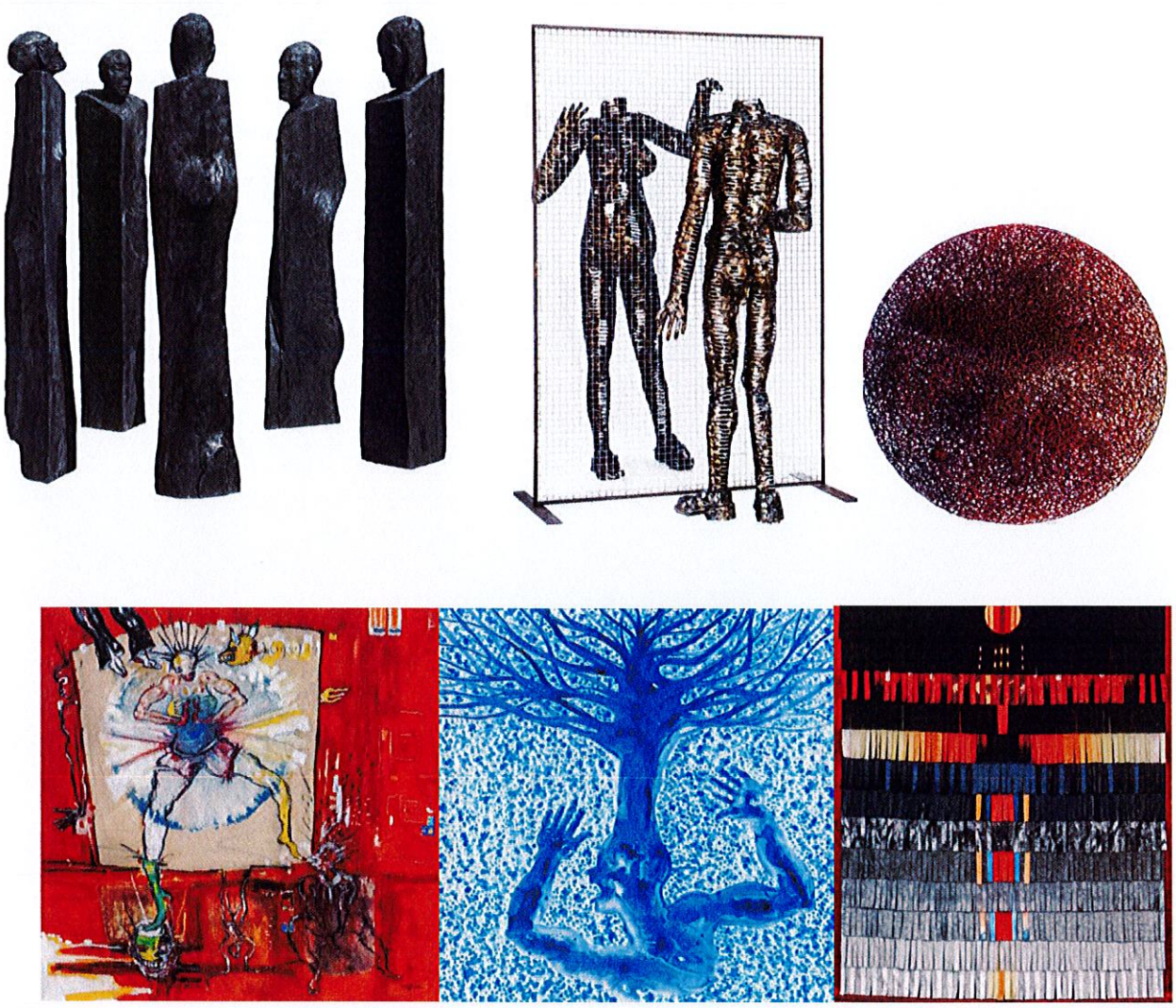


Siriki Ky, *Africa faces its Destiny* (2021). Welded iron, dimensions variable. Collection Ten North Group

Ky's sculpture emerges from the depth of Africanness as a spatial and temporal strategy of resistance, insisting on it as the past, present, and future to highlight African aesthetics' "times of entanglement" with dominant representations. The work thinks of political and imaginary linkages beyond the simplistic valorization of the former and the equally simplistic condemnation of the latter. The two dimensions of the political and the imaginary, with their instinctual content, have specific figurations in the articulations because there is no imaginary without a political-sociological context.

Under the Bridge, Beyond the Beach, Above the Muck: Snapshots from the Ten North Collection

@ The Train Station



The Ten North's collection is unique in its approach, embodying and enacting black memory principles. It serves as a locus of memory, a landmark around which past events structure present memory. This distinctive approach provides an alternative model, operationalizing a process that offers an architecture of memory and a metonymic model for consciousness. Within this model, historical facts are selectively preserved and positioned to enable renewal.

And Is: The Black Florida Project

The Photography of Johanne Rahman

@ The Hurst Building

Curated by Melissa Hunter Davis, Director, Editor, Sugarcane Magazine



Elizabeth Alexander argues that "Black creativity emerges from a long series of innovative responses to the death and violence that afflict our communities." *And Is: The Black Florida Project* by Johanne Rahman traces this evolution in a documentary focusing on black communities in Florida.

And Is explores the shifting urban and rural landscapes occupied by Black communities throughout the State of Florida. Rahman underscores the urgency and importance of recording neighborhoods in a shifting dynamic flux through environmental, landscape portraits, and architectural images. Paralleling her hometown--- the often-stigmatized Laventille Hills neighborhood of Trinidad and Tobago, the artist articulates a "practice of Diaspora," understanding and documenting these communities that echoes in a call and response to offer an alternative view of working-class Black neighborhoods as a sense of place. The works in this exhibition illustrate the artist's creative uses of photography to resist colonization, inequality, disenfranchisement, and brutality.

Site Memory: The Sculpture garden

@ The VFW Garden

Curated by James Brazil's Studio

The lot on which the Veterans of Foreign Wars building once stood is transformed into a sculpture garden by Australian landscape architect James Brazil.



Site Memory provides a model for understanding how African Diaspora mnemonics generate the semantic dynamism and social construction of historical thought. The life size sculptures tucked in the maze of larges printed book covers by African Americans writers banned by the state of Florida title Required Readings in a luxurious vegetation provide a "topoi" construction that is place and topic where memories converge.

James Brazil Site provides a model for understanding how African Diaspora mnemonics generate the semantic dynamism and social construction of historical thought. Thus, *Site Memory* can then be 'read' as a psychological diagram of the African Diaspora subconscious.

Black Aliveness and an Aesthetics of Being

Surrounding Programs

New Times of entanglement: A Conversation with Kevin Quashie, Author, *Black Aliveness or a Poetics of Being* (Tentative)

The conversation explores the notion of Blackness in relation to the rhetoric of the "post" and "De" in ways in which the latter may appear as just a "synchronic monoculturalism"— a tacit regurgitation of the old false universalism of Europe and its diachronic evolutionism.

Panel 1. Jamaica on my Mind
Phillip Thomas, Chair

Exhibitions recounting the history of Jamaican contemporary arts can explore its political, social, and economic dimensions. They provide a reading of Jamaica's preoccupations and projections to the future. Around the curator, artists, critics, and scholars engage in narrativizing processes that testify to the evolution of the arts and the maturity of the ideas they develop.

Panel 2. Contemporary Art, Contemporaneity and the Black World: Rethinking the Aesthetic Cartography

A Conversation with Dr. Malick Ndiaye and Siriki Ky

Rethinking knowledge on African and African Diaspora Arts to better apprehend the logics of artistic creation about translation, conditions of knowledge productions and the supports attached to them are crucial in the development of new cultural policies. The panels in this theme not only explore the art and history in the Black World, but also pave the way for potential transformative impacts.

- **Evening Performing Arts**
- **Fashion Design**
- **Films Projection**

Ten North Group™
Formerly OLCDC

Creating Stronger Communities Since 1980

Our mission is to transform lives by providing equitable access to housing and wealth-building opportunities for under-resourced communities, particularly those affected by systemic bias. Over the last 40 years, OLCDC (now Ten North Group) has been a leading force in shaping our community. Our comprehensive approach to community and housing development has helped us become one of Florida's most prominent and respected CDCs (Community Development Corporations).

Ten North Group accomplishes its mission by owning, developing, and managing affordable housing and creating opportunities for home ownership. In addition, Ten North Group builds communities through its social, educational, and financial programs, which have, to date, served close to 4,000 youths, 6,250 children and families, and close to 2,500 first-time home buyers. Ten North Group's CDFI has provided loans and technical assistance to over 1,500 small business owners and entrepreneurs. The ten North Group's Art Foundation, a key part of our holistic approach, uses the arts and culture to write future stories of previously overlooked places.

490 Opa-locka Blvd, Ste. 20

Opa-locka, Florida 33054

Tel. (1) 305 687 3545

Email: Logan@tennorthgroup.com

www.thetennorthgroup.com

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 05/30/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Justworks Customer Success	
Doug Jones (Justworks) c/o Artex Risk Solutions, Inc. P.O. Box 13838 Scottsdale, AZ 85267	PHONE (A/C, No, Ext): (888) 534-1711	FAX (A/C, No):
	E-MAIL ADDRESS: support@justworks.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : American Zurich Insurance Company	40142
INSURED Justworks Employment Group LLC Alt. Emp: Opa-locka Community Development Corporation, Inc. dba: Ten North Group PO Box 7119 Church Street Station New York, NY 10008-7119	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 24NY0171175983 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	DED ☐ RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N ☐ (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC 00-94-236-08	06/01/2024	06/01/2025	X PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$ 2,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 2,000,000
							E.L. DISEASE - POLICY LIMIT	$ 2,000,000
				Location Coverage Period:	06/01/2024	06/01/2025	Client# 139043-FL	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Coverage is provided for only those co-employees of, but not subcontractors to:
Opa-locka Community Development Corporation, Inc.
dba: Ten North Group
490 Opa-locka Boulevard Suite 20
Opa-Locka, FL 33054

CERTIFICATE HOLDER

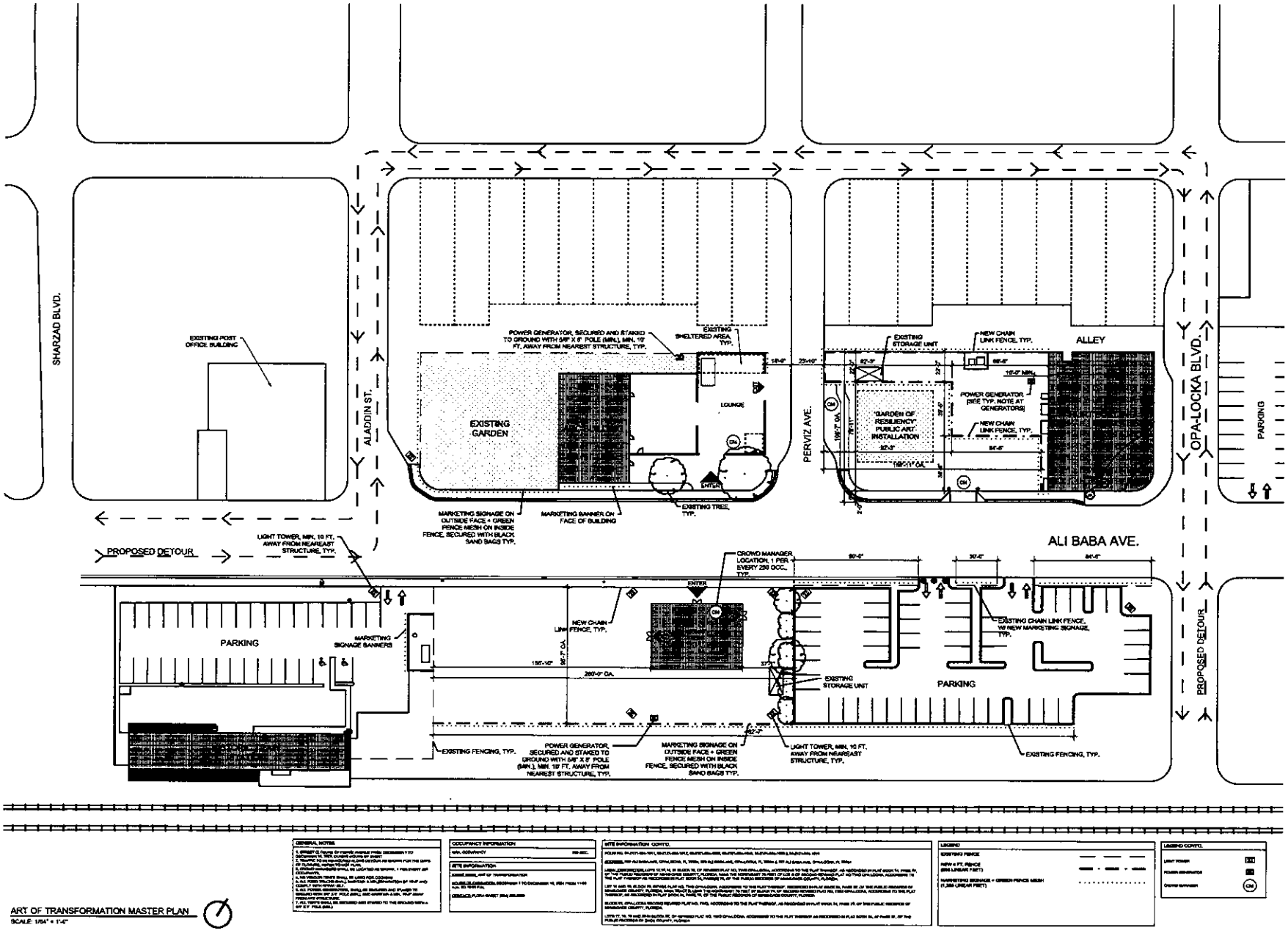
City of Opa-locka
780 Fisherman Street, 4th Fl.
Opa-Locka, FL 33054

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ART OF TRANSFORMATION MASTER PLAN
SCALE: 1/64" = 1'-0"

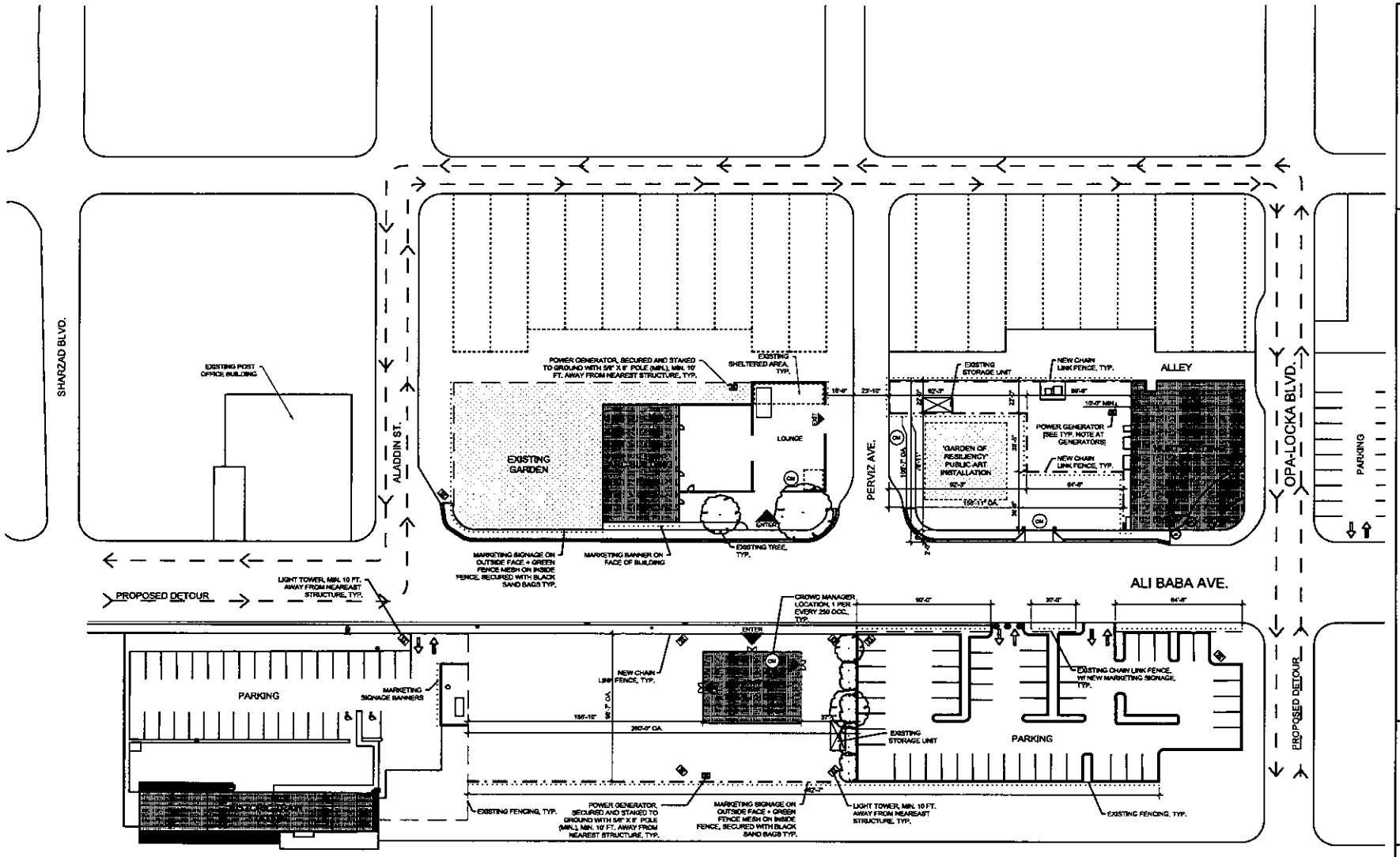
STUDIO BRAZIL

ART BASEL 2024: ART OF TRANSFORMATION EVENT

Eddie A. Seymour
2024.11.04 10:12:31 -05'00'

AOT MASTER PLAN
SCALE: 1/64" = 1'
PLOT DATE: 11/1/2024

A-1



ART OF TRANSFORMATION MASTER PLAN
SCALE: 1/64" = 1'-0"

GENERAL NOTES

OCCUPANCY INFORMATION

SITE INFORMATION

SITE INFORMATION CONT'D

LEGEND

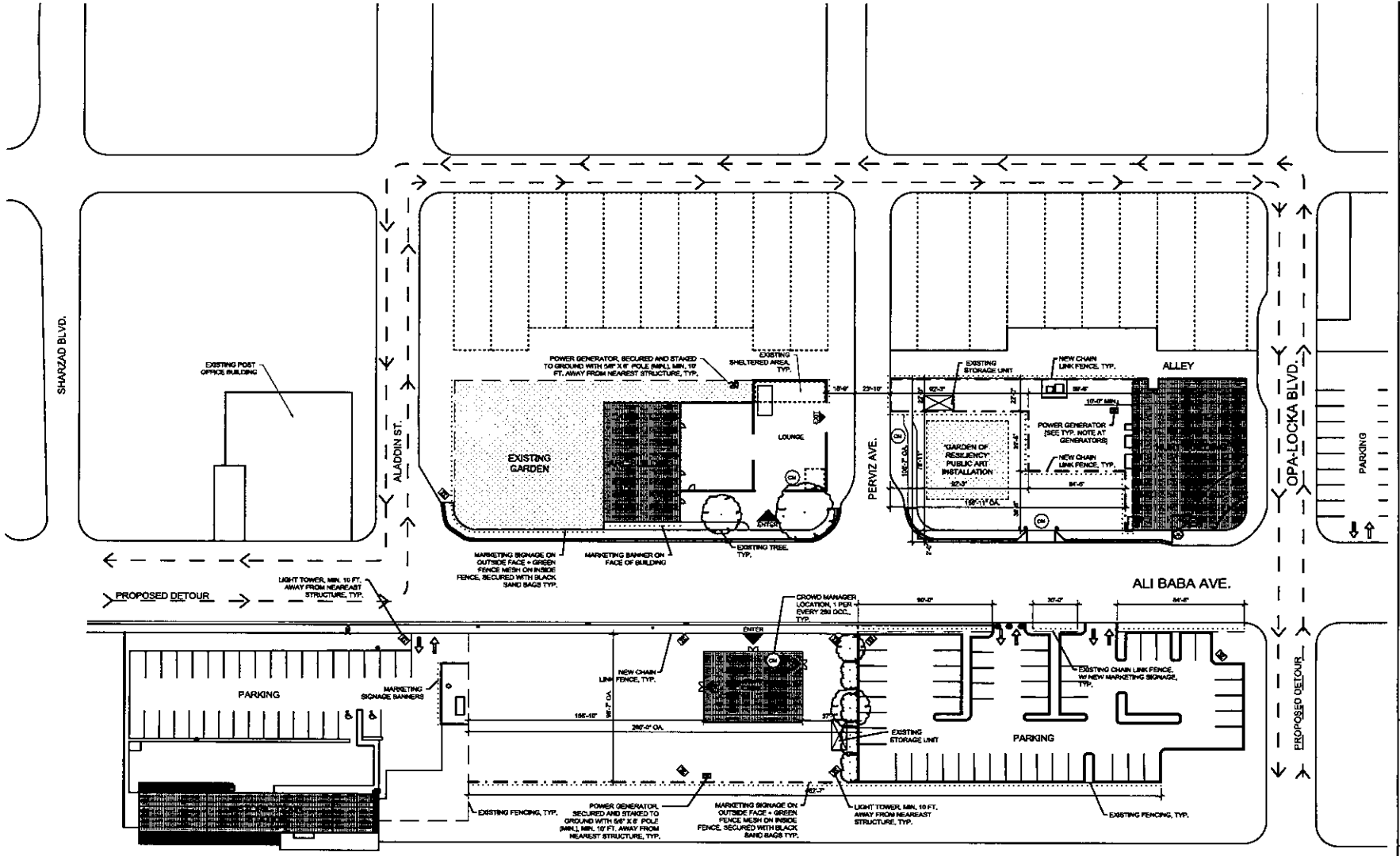
LEGEND CONT'D

STUDIO BRAZIL

ART BASEL 2024: ART OF TRANSFORMATION EVENT

Eddie A. Seymour
2024.11.04 10:12:31 -05'00'

SHEET TITLE: AOT MASTER PLAN
SCALE: 1/64" = 1'
PLOT DATE: 11/1/2024
SHEET NUMBER: A-1



ART OF TRANSFORMATION MASTER PLAN
SCALE: 1/64" = 1'-0"

STUDIO BRAZ

ART BASEL 2024: ART OF TRANSFORMATION EVENT

Eddie A. Seymour
2024.11.04 10:12:31 -05'00'

SHEET TITLE: AOT MASTER PLAN
SCALE: 1/64" = 1' | PLOT DATE: 11/1/2024
SHEET NUMBER: A-1

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/19/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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PRODUCER

TCC Associates, Inc.
PO Box 11975
Fort Lauderdale, FL 33339

Phone No. (954) 565-1117 Fax No. (954) 565-1131

CONTACT NAME: Beth Cundy
PHONE (A/C, No, Ext): (954) 565-1117 **FAX (A/C, No):** (954) 565-1131
E-MAIL ADDRESS: beth@tccassociates.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : ZAI - Zurich American Insurance Company	16535
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

Opa-locka Community Development Corp
490 Opa-locka Blvd, Suite 200
Opa Locka, FL 33054

Phone No. 7863836197 Fax No.

COVERAGES **CERTIFICATE NUMBER:** 1145934 **REVISION NUMBER:**

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INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
ZAI	X COMMERCIAL GENERAL LIABILITY			FLM6872193-00	12/03/2024	12/10/2024	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR	X					DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
	X Host Liquor						MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 1,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
ZAI	Inland Marine			FLM6872193-00	12/03/2024	12/10/2024		See Attached

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES

Coverage Location: United States & Canada

Event: Art of Transformation Community Event

Certificate Holder is named as an Additional Insured as their interests may appear.

All coverages expire at 12:01 a.m. Standard Time.

* The actual event dates may be limited. Please review the Scheduled Events form attached to this certificate.

CERTIFICATE HOLDER

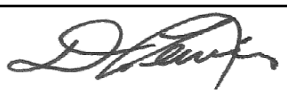
Opa-Locka Community Development Corp, Inc.
490 Opa Locka Boulevard, Suite 20
Opa-Locka, FL 33054
United States Of America

Phone No. Fax No.

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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ADDITIONAL COVERAGE DETAILS

DATE (MM/DD/YY)
11/19/2024

INSURED Opa-locka Community Development Corp

The following is attached to and made part of certificate number 1145934.

Policy Details	Coverage	Limit	Deductible
Inland Marine			
Company:	Zurich American Insurance Company		
Policy Number:	FLM6872193-00		
*Period:	12/03/2024 - 12/10/2024: 7 Day(s)		
	Equipment, props, sets, wardrobe (rented)	Excluded	
	Equipment, Props, Sets, Wardrobe (owned)	Excluded	
	Rented Furs, Jewelry, Art & Antiques Coverage	Excluded	
	Extra Expense	Excluded	
	Third Party Property Damage	10,000	1,500
	Hired/Non-Owned Physical Damage-Aggregate	Excluded	
	Hired/Non-Owned Physical Damage-Per Vehicle	Excluded	
	Rental Cost Reimbursement	Excluded	
	Waiver of Subrogation	Excluded	
	Coverage Extension Endorsement		
	Coverage Extension Endorsement	Excluded	
	Terrorism	Included	
General Liability			
Company:	Zurich American Insurance Company		
Policy Number:	FLM6872193-00		
*Period:	12/03/2024 - 12/10/2024: 7 Day(s)		
	General Aggregate	2,000,000	
	Products / Completed Operations	1,000,000	
	Personal / Advertising Injury	1,000,000	
	Each Occurrence	1,000,000	
	Fire Legal	100,000	
	Medical Payments	5,000	
	Blanket Additional Insureds (other than city/special certs & waivers)	Included	
	City / Other Special Certificates	Excluded	
	Waiver of Subrogation	Excluded	
	Host Liquor	Included	
	Liquor Liability-Aggregate	Excluded	
	Liquor Liability-Each Common Cause Limit	Excluded	
	Abuse & Molestation-Aggregate	Excluded	
	Abuse & Molestation-Each Claim	Excluded	
	Abusive Act Alleged Participant Supplemental Coverage - Aggregate	Excluded	
	Abusive Act Alleged Participant Supplemental Coverage - Occurrence	Excluded	
	Participant Legal Liability - Aggregate Limit	Excluded	
	Participant Legal Liability - Occurrence Limit - Bodily Injury	Excluded	
	Participant Legal Liability - Occurrence Limit - Property Damage	Excluded	
	Terrorism	Included	

*All coverages expire at 12:01 a.m. Standard Time.

Scheduled Events

Certificate Number: 1145934

Event Type	Venue	Dates	Attendees
Art of Transformation Community Event Cultural Events (Music)	The ARC 675 Ali Baba Avenue Opa Locka, FL 33054	12/03/2024 - 12/04/2024 at 12:01 am (Setup) 12/04/2024 - 12/09/2024 at 12:01 am 12/09/2024 - 12/10/2024 at 12:01 am (Tear Down)	20 Attractions 125 Participants 750 Spectators

DATE (MM/DD/YY)

SCHEDULE OF FORMS

11/19/2024

Insured: Opa-locka Community Development Corp

This Schedule of Forms is attached to and made part of certificate number 1145934, as of 11/19/2024 at 01:28 PM PT, and lists the forms included in the policy(s) and subsequent endorsement (s) at the time this certificate was issued.

Form #	Ed.	Name
Special Event Package		
Notices		
U-GU-319-F	0109	Important Notice - In Witness Clause
U-GU-279-F	0519	Commercial Property And Casualty Risk Management Plans -Florida
U-GU-874-BCW	0223	Notice of Disclosure for Agent and Broker Compensation
UGU873ACW	0611	Disclosure Statement
U-GL-1197-A CW	0104	Asbestos Exclusion Endorsement
U-GU-1191-ACW	0315	Sanctions Exclusion Endorsement
U-GU-395-D	0709	Important Notice to Florida Policyholders
Common		
UGU727ACW	0806	Commercial Insurance Policy
UGU1292ACW	0422	Notice Of Important Provisions
UGUD310A	0193	Common Policy Declarations
UGU619ACW	1002	Schedule of Forms and Endorsements
UGU621ACW	1002	Schedule Of Named Insured(s)
UGU618ACW	1002	Schedule Of Locations
IL0017	1198	Common Policy Conditions
UABI100ACW	0117	Schedule Of Productions
UABI101ACW	0117	Definition Of Employee
UAB100ACW	0117	Minimum Earned Premium Endorsement
IL0003	0908	Calculation of Premium
U-GU-630-ECW	0120	Disclosure of Important Information Relating to Terrorism Risk Insurance Act
Inland Marine		
UABMD104ACW	0117	Commercial Inland Marine Declarations Entertainment Program
UGU619ACW	1002	Schedule of Forms and Endorsements
CM0001	0904	Commercial Inland Marine Conditions
UABM133ACW	0117	Common Conditions, Exclusions And Definitions
UABM109ACW	0117	Third Party Property Damage Coverage Form
UABM103ACW	0117	Loss Payable Endorsement
UABM128ACW	0117	Excluded Property Endorsement
UABM114ACW	0117	Unscheduled Production, Presentation Or Event Exclusion
UABM100ACW	0117	Stunt, Animal Exposure And Pyrotechnic Exclusion
IL0175	0907	Florida Changes - Legal Action Against Us Endorsement
CM0116	0522	Florida Changes - Loss Payment Endorsement
IL0255	0324	Florida Changes - Cancellation and Nonrenewal
U-GU-767-BCW	0115	Cap on Losses From Certified Acts of Terrorism
U-GU-616-ACW	1002	Schedule of Taxes, Fees and Surcharges
General Liability		
UABLD100BCW	0119	Commercial General Liability Coverage Part Declarations
UGU619ACW	1002	Schedule of Forms and Endorsements
UABI110ACW	1020	Schedule of Events
CG0001	0413	Commercial General Liability Coverage Form
CG2011	1219	Additional Insured - Managers of Lessors of Premises
CG2012	1219	Additional Insured - State or Governmental Agency or Subdivision or Political Subdivision - Permits or Authorizations
CG2026	1219	Additional Insured - Designated Person or Organization
CG2028	1219	Additional Insured - Lessor of leased equipment
UABL121ACW	0117	Limited Stationary Aircraft Coverage
CG2106	1223	Exclusion - Access or Disclosure of Confidential or Personal Information and Data-Related Liability - With Limited Bodily Injury Exception
CG0069	1223	Exclusion - Violation of Law Addressing Data Privacy
CG4035	1223	Exclusion - Cyber Incident
U-GL-1171-B-CW	0719	Fungi Bacteria Exclusion
U-GL-1178-A-CW	0703	Asbestos Exclusion
CG2147	1207	Employment Related Practices Exclusion
U-GL-1517-BCW	0413	Collection or Distribution of Material or Information in Violation of Law Exclusion
UABL131ACW	0117	Non-Performing Animal Exclusion
UABL102ACW	0117	Property Damage To Rented Premises Exclusion
UABL129ACW	0117	Assault And Battery Exclusion
UGL1250ACW	0905	Abusive Act Liability Exclusion
UABL122ACW	0117	Newly Acquired Or Formed Entity Exclusion
UABL107ACW	0117	Exclusion - Insureds Conducting Media, Entertainment, Or Internet Type Operations
UABL130ACW	0117	Informational Content Exclusion
UABL135ACW	0117	Media Content Exclusion
UABL137ACW	0117	Cross Suits Exclusion
UABL138ACW	0117	Personal And Advertising Injury - Exclusion Of False Arrest, Detention, Imprisonment, Libel, Slander, Right Of Privacy, Advertising Idea, And Copyright, Trademark Or Trade Secret
UABL106ACW	0117	Unscheduled Production, Presentation Or Event Exclusion
UABL103ACW	0117	Stunt, Pyrotechnic And Animal Exposure Exclusion
UABL144ACW	1019	Event Conditional Exclusion
CG2132	0509	Communicable Disease Exclusion
UABL146ACW	1019	Unscheduled Products Exclusion
UABL145AFL	1019	Hazardous Activities, Pyrotechnic Activities and Animal Exposure Exclusion - Florida

SCHEDULE OF FORMS

DATE (MM/DD/YY)
11/19/2024

Insured: Opa-locka Community Development Corp

This Schedule of Forms is attached to and made part of certificate number 1145934, as of 11/19/2024 at 01:28 PM PT, and lists the forms included in the policy(s) and subsequent endorsement (s) at the time this certificate was issued.

Form #	Ed.	Name
UABL147ACW	1019	Loss Arising Out of Participation in a Sports or Athletic Event, Competition, Contest or Exhibition Exclusion
UABL143ACW	1019	Moshing Exclusion
UABL150ACW	1019	Camping Conditional Exclusion
IL0021	0908	Nuclear Energy Liability Exclusion Endorsement (Broad Form)
CG0220	1224	Florida Changes - Cancellation and Nonrenewal
UABL105ACW	0117	Commercial General Liability Changes
U-GU-767-BCW	0115	Cap on Losses From Certified Acts of Terrorism
U-GU-616-ACW	1002	Schedule of Taxes, Fees and Surcharges

Disclaimers

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The information included in this certificate that has been provided by Abacus Insurance Brokers, LLC is for your information only, and does not create a contract or agency relationship between the certificate holder or any insured and Abacus Insurance Brokers, LLC. By accepting this certificate the certificate holder acknowledges that Abacus Insurance Brokers, LLC is not the agent of the certificate holder or any insured, but is solely the agent of the listed carrier(s). Abacus Insurance Brokers, LLC makes no representation whether the coverages listed herein are appropriate for the certificate holder or any insured. Please review the listed coverages carefully and direct any questions to your broker. For a complete listing of coverages, terms, conditions and exclusions, please view the referenced Policy(s).

Certificate Verification

Date (MM/DD/YYYY)
11/19/2024

Insured: Opa-locka Community Development Corp

Abacus provides an efficient website lookup tool for certificate holders to verify the authenticity of certificates of insurance.

1. Navigate to the website and input the verification code OR Scan the QR code.
2. The actual certificate issued through the Abacus Platform will download.
3. Compare the details of the downloaded certificate to the certificate presented by the client.

Website	Verification Code
www.abacus.net/verify-certificate	090KOCKC7I

About Certificates Issued through the Abacus.net Platform

- Abacus requires that all certificates be issued through the Abacus Platform. Certificates issued outside of the Abacus Platform are invalid.
- Certificates may be issued through the Abacus Platform by either the named insured (if registered through the Abacus Platform) or their Abacus registered insurance broker.
- Certificates with any stray marks, cross outs or alterations of any sort are invalid.
- Each certificate is numbered and correlates to the document issued through the Abacus Platform.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/19/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

TCC Associates, Inc.
PO Box 11975
Fort Lauderdale, FL 33339

Phone No. (954) 565-1117 Fax No. (954) 565-1131

CONTACT NAME: Beth Cundy
PHONE (A/C, No, Ext): (954) 565-1117 **FAX (A/C, No):** (954) 565-1131
E-MAIL ADDRESS: beth@tccassociates.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : ZAI - Zurich American Insurance Company	16535
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

Opa-locka Community Development Corp
490 Opa-locka Blvd, Suite 200
Opa Locka, FL 33054

Phone No. 7863836197 Fax No.

COVERAGES **CERTIFICATE NUMBER:** 1145931 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
ZAI	X COMMERCIAL GENERAL LIABILITY			FLM6872193-00	12/03/2024	12/10/2024	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR	X					DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
	X Host Liquor						MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 1,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	N / A					E.L. EACH ACCIDENT	$
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
ZAI	Inland Marine			FLM6872193-00	12/03/2024	12/10/2024		See Attached

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES

Certificate Holder is named as an Additional Insured as their interests may appear.

Coverage Location: United States & Canada

Event: Art of Transformation Community Event

All coverages expire at 12:01 a.m. Standard Time.

* The actual event dates may be limited. Please review the Scheduled Events form attached to this certificate.

CERTIFICATE HOLDER

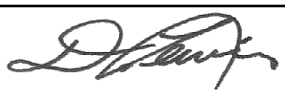
The City of Opa-Locka
780 Fishernan Street
Opa-Locka, FL 33054
United States Of America

Phone No. Fax No.

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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ADDITIONAL COVERAGE DETAILS

DATE (MM/DD/YY)
11/19/2024

INSURED Opa-locka Community Development Corp

The following is attached to and made part of certificate number 1145931.

Policy Details	Coverage	Limit	Deductible
Inland Marine			
Company:	Zurich American Insurance Company		
Policy Number:	FLM6872193-00		
*Period:	12/03/2024 - 12/10/2024: 7 Day(s)		
	Equipment, props, sets, wardrobe (rented)	Excluded	
	Equipment, Props, Sets, Wardrobe (owned)	Excluded	
	Rented Furs, Jewelry, Art & Antiques Coverage	Excluded	
	Extra Expense	Excluded	
	Third Party Property Damage	10,000	1,500
	Hired/Non-Owned Physical Damage-Aggregate	Excluded	
	Hired/Non-Owned Physical Damage-Per Vehicle	Excluded	
	Rental Cost Reimbursement	Excluded	
	Waiver of Subrogation	Excluded	
	Coverage Extension Endorsement		
	Coverage Extension Endorsement	Excluded	
	Terrorism	Included	
General Liability			
Company:	Zurich American Insurance Company		
Policy Number:	FLM6872193-00		
*Period:	12/03/2024 - 12/10/2024: 7 Day(s)		
	General Aggregate	2,000,000	
	Products / Completed Operations	1,000,000	
	Personal / Advertising Injury	1,000,000	
	Each Occurrence	1,000,000	
	Fire Legal	100,000	
	Medical Payments	5,000	
	Blanket Additional Insureds (other than city/special certs & waivers)	Included	
	City / Other Special Certificates	Excluded	
	Waiver of Subrogation	Excluded	
	Host Liquor	Included	
	Liquor Liability-Aggregate	Excluded	
	Liquor Liability-Each Common Cause Limit	Excluded	
	Abuse & Molestation-Aggregate	Excluded	
	Abuse & Molestation-Each Claim	Excluded	
	Abusive Act Alleged Participant Supplemental Coverage - Aggregate	Excluded	
	Abusive Act Alleged Participant Supplemental Coverage - Occurrence	Excluded	
	Participant Legal Liability - Aggregate Limit	Excluded	
	Participant Legal Liability - Occurrence Limit - Bodily Injury	Excluded	
	Participant Legal Liability - Occurrence Limit - Property Damage	Excluded	
	Terrorism	Included	

*All coverages expire at 12:01 a.m. Standard Time.

Scheduled Events

Certificate Number: 1145931

Event Type	Venue	Dates	Attendees
Art of Transformation Community Event Cultural Events (Music)	The ARC 675 Ali Baba Avenue Opa Locka, FL 33054	12/03/2024 - 12/04/2024 at 12:01 am (Setup) 12/04/2024 - 12/09/2024 at 12:01 am 12/09/2024 - 12/10/2024 at 12:01 am (Tear Down)	20 Attractions 125 Participants 750 Spectators

DATE (MM/DD/YY)

SCHEDULE OF FORMS

11/19/2024

Insured: Opa-locka Community Development Corp

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Form #	Ed.	Name
Special Event Package		
Notices		
U-GU-319-F	0109	Important Notice - In Witness Clause
U-GU-279-F	0519	Commercial Property And Casualty Risk Management Plans -Florida
U-GU-874-BCW	0223	Notice of Disclosure for Agent and Broker Compensation
UGU873ACW	0611	Disclosure Statement
U-GL-1197-A CW	0104	Asbestos Exclusion Endorsement
U-GU-1191-ACW	0315	Sanctions Exclusion Endorsement
U-GU-395-D	0709	Important Notice to Florida Policyholders
Common		
UGU727ACW	0806	Commercial Insurance Policy
UGU1292ACW	0422	Notice Of Important Provisions
UGUD310A	0193	Common Policy Declarations
UGU619ACW	1002	Schedule of Forms and Endorsements
UGU621ACW	1002	Schedule Of Named Insured(s)
UGU618ACW	1002	Schedule Of Locations
IL0017	1198	Common Policy Conditions
UABI100ACW	0117	Schedule Of Productions
UABI101ACW	0117	Definition Of Employee
UAB100ACW	0117	Minimum Earned Premium Endorsement
IL0003	0908	Calculation of Premium
U-GU-630-ECW	0120	Disclosure of Important Information Relating to Terrorism Risk Insurance Act
Inland Marine		
UABMD104ACW	0117	Commercial Inland Marine Declarations Entertainment Program
UGU619ACW	1002	Schedule of Forms and Endorsements
CM0001	0904	Commercial Inland Marine Conditions
UABM133ACW	0117	Common Conditions, Exclusions And Definitions
UABM109ACW	0117	Third Party Property Damage Coverage Form
UABM103ACW	0117	Loss Payable Endorsement
UABM128ACW	0117	Excluded Property Endorsement
UABM114ACW	0117	Unscheduled Production, Presentation Or Event Exclusion
UABM100ACW	0117	Stunt, Animal Exposure And Pyrotechnic Exclusion
IL0175	0907	Florida Changes - Legal Action Against Us Endorsement
CM0116	0522	Florida Changes - Loss Payment Endorsement
IL0255	0324	Florida Changes - Cancellation and Nonrenewal
U-GU-767-BCW	0115	Cap on Losses From Certified Acts of Terrorism
U-GU-616-ACW	1002	Schedule of Taxes, Fees and Surcharges
General Liability		
UABLD100BCW	0119	Commercial General Liability Coverage Part Declarations
UGU619ACW	1002	Schedule of Forms and Endorsements
UABI110ACW	1020	Schedule of Events
CG0001	0413	Commercial General Liability Coverage Form
CG2011	1219	Additional Insured - Managers of Lessors of Premises
CG2012	1219	Additional Insured - State or Governmental Agency or Subdivision or Political Subdivision - Permits or Authorizations
CG2026	1219	Additional Insured - Designated Person or Organization
CG2028	1219	Additional Insured - Lessor of leased equipment
UABL121ACW	0117	Limited Stationary Aircraft Coverage
CG2106	1223	Exclusion - Access or Disclosure of Confidential or Personal Information and Data-Related Liability - With Limited Bodily Injury Exception
CG0069	1223	Exclusion - Violation of Law Addressing Data Privacy
CG4035	1223	Exclusion - Cyber Incident
U-GL-1171-B-CW	0719	Fungi Bacteria Exclusion
U-GL-1178-A-CW	0703	Asbestos Exclusion
CG2147	1207	Employment Related Practices Exclusion
U-GL-1517-BCW	0413	Collection or Distribution of Material or Information in Violation of Law Exclusion
UABL131ACW	0117	Non-Performing Animal Exclusion
UABL102ACW	0117	Property Damage To Rented Premises Exclusion
UABL129ACW	0117	Assault And Battery Exclusion
UGL1250ACW	0905	Abusive Act Liability Exclusion
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DATE (MM/DD/YY)
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Insured: Opa-locka Community Development Corp

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UABL105ACW	0117	Commercial General Liability Changes
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Certificate Verification

Date (MM/DD/YYYY)
11/19/2024

Insured: Opa-locka Community Development Corp

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Website	Verification Code
www.abacus.net/verify-certificate	0O0NOCKW7F

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Ron DeSantis, Governor

Melanie S. Griffin, Secretary

STATE OF FLORIDA

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

DIV OF ALCOHOLIC BEVERAGES & TOBACCO

LICENSE NUMBER: BEV1622269

EXPIRATION DATE: MARCH 31, 2025

THE CATERER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 565, FLORIDA STATUTES
SERIES: 13CT
CONSUMPTION ON PREMISES ONLY

ALL-INCLUSIVE FOOD AND BEVERAGE LLC
ALL-INCLUSIVE FOOD AND BEVERAGE
15837 WAVERLY MANOR
DAVIE FL 33331

Art Of Transformation 2024
Dec. 5,6,7,8 2024

ISSUED: 03/14/2024

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RESOLUTION NO. 24-XXX

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA, FLORIDA, ADOPTING THE ELECTION RESULTS OF THE CITY OF OPA-LOCKA'S GENERAL ELECTION HELD ON NOVEMBER 5, 2024, FOR THE PURPOSE OF ELECTING TWO CITY COMMISSIONERS, AS CERTIFIED BY MIAMI-DADE COUNTY SUPERVISOR OF ELECTIONS; PROVIDING FOR THE INCORPORATION OF RECITALS; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the Miami-Dade County Canvassing Board has examined the election results of the City of Opa-Locka's General Election held on November 5, 2024 and certified said results, and

WHEREAS, the Miami-Dade County Supervisor of Elections has declared the election results to be proper and correct and has forwarded the results to the City of Opa-Locka; and

WHEREAS, the total number of votes cast for Opa-Locka Commissioner was 5,426 and the winners are set forth in attached Exhibit " A"; and

NOW, THEREFORE, BE IT DULY RESOLVED BY THE CITY COMMISSION OF THE CITY OF OPA- LOCKA, FLORIDA:

SECTION 1. The recitals to the preamble herein are incorporated by reference.

SECTION 2. The City Commission of the City of Opa-Locka, Florida, hereby ratifies the results of the November 5, 2024 General Election, as certified by Miami Dade County Supervisor of Elections.

SECTION 3. Sections of this Resolution may be renumbered or re-lettered and corrections of typographical errors which do not affect the intent may be authorized by the City Manager, following review by the City Attorney and without need of public hearing, by filing a corrected copy of same with the City.

SECTION 4. This Resolution shall take effect upon the adoption and is subject to the approval of the Governor or Governor's Designee

PASSED and **ADOPTED** this _____ day of _____, 2024.

_____
John Taylor, Mayor

ATTEST:

_____
Joanna Flores, City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____
Burnadette Norris-Weeks, P.A.
City Attorney

Moved by: _____

Seconded by: _____

VOTE:

Commissioner Bass	_____
Commissioner Kelley	_____
Commissioner Williams	_____
Vice Mayor Ervin	_____
Mayor Taylor	_____

City of Opa-locka
Agenda Cover Memo

City Clerk :	Joanna Flores			**City Clerk:**		
Interim City Manager:	Sha'mecca Lawson			**CM Signature:**		
Commission Meeting Date:	*11.13.2024*		**Item Type:** *(Enter X in box)*	**Resolution**	**Ordinance**	**Other**
				X		
Fiscal Impact: *(Enter X in box)*	**Yes**	**No**	**Ordinance Reading:** *(Enter X in box)*		**1st Reading**	**2nd Reading**
	X		**Public Hearing:** *(Enter X in box)*	**Yes** / **No**		**Yes** / **No**
					X	**X**
Funding Source: *Account# :*	*(Enter Fund & Dept)* Ex: See Financial Impact Section		**Advertising Requirement:** *(Enter X in box)*	**Yes**		**No**
						X
Contract/P.O. Required: *(Enter X in box)*	**Yes**	**No**	**RFP/RFQ/Bid#:**			
		X				
Strategic Plan Related *(Enter X in box)*	**Yes**	**No**	**Strategic Plan Priority Area:** **Enhance Organizational** ☐ **Bus. & Economic Dev** ☐ **Public Safety** ☐ **Quality of Education** ☐ **Qual. of Life & City Image** ■ **Communication** ☐		**Strategic Plan Obj./Strategy:** *(list the specific objective/strategy this item will address)*	
		X				
Sponsor Name	Interim City Manager		**Department:**		City Manager	

Short Title:

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF OPA-LOCKA ADOPTING THE ELECTION RESULTS OF THE CITY OF OPA-LOCKA'S GENERAL ELECTION HELD ON NOVEMBER 5TH, 2024.

Staff Summary:

The City Commission approved Resolution No. 24-103, calling for a general election on November 5th, 2024 for the purpose of electing two City Commissioners. The Supervisor of Elections of Miami-Dade County has declared the election results to be correct and proper in which they have been disbursed to the City Clerk. The City Commission desires to adopt the results as required to appoint the City's new elected officials.

Proposed Action:

Staff recommend the City Commission adopt the election results of the general election held on November 5th, 2024.

Attachment:

Certification Letter
Official Results

Elections
2700 NW 87th Avenue
Miami, Florida 33172
T 305-499-8683 F 305-499-8501
TTY 305-499-8480

miamidade.gov

CERTIFICATION

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

I, Christina White, Supervisor of Elections for Miami-Dade County, Florida, do hereby certify that the attached is a true and correct copy of the Official Results for the Miami-Dade County General Election conducted on November 5, 2024, which included the **Opa-locka General Election**:

Commissioners

WITNESS MY HAND AND

OFFICIAL SEAL, AT MIAMI,

MIAMI-DADE COUNTY, FLORIDA,

ON THIS 15TH DAY OF NOVEMBER, 2024

Christina White
Supervisor of Elections
Miami-Dade County

Enclosure

	TOTAL VOTES	%	ED	VBM	EV
PRECINCTS COUNTED (OF 762)	762	100.00			
REGISTERED VOTERS - TOTAL	1525,474				
BALLOTS CAST - TOTAL	1104,596		215,213	291,659	597,724
BALLOTS CAST - BLANK	36,025	3.26	10,260	5,269	20,496
VOTER TURNOUT - TOTAL		72.41			
VOTER TURNOUT - BLANK		2.36			
President and Vice President					
(VOTE FOR) 1					
Donald J. Trump (REP)	605,590	55.19	121,757	115,221	368,612
Kamala D. Harris (DEM)	480,355	43.78	87,906	170,153	222,296
Jill Stein (GRE)	3,813	.35	1,229	1,113	1,471
WRITE-IN	3,116	.28	898	1,014	1,204
Chase Oliver (LPF)	2,096	.19	640	647	809
Claudia De la Cruz (PSL)	1,308	.12	388	395	525
Randall Terry (CPF)	476	.04	149	126	201
Peter Sonski (ASP)	455	.04	108	180	167
Total	1097,209		213,075	288,849	595,285
Over Votes	2,072		605	1,053	414
Under Votes	5,315		1,533	1,757	2,025
United States Senator					
(VOTE FOR) 1					
Rick Scott (REP)	585,445	54.36	114,413	114,050	356,982
Debbie Mucarsel-Powell (DEM)	477,598	44.35	87,571	169,392	220,635
Feena Bonoan (LPF)	4,737	.44	1,518	1,102	2,117
Ben Everidge (NPA)	4,244	.39	1,226	1,064	1,954
Tuan TQ Nguyen (NPA)	4,088	.38	1,295	949	1,844
WRITE-IN	888	.08	273	197	418
Total	1077,000		206,296	286,754	583,950
Over Votes	734		127	379	228
Under Votes	26,861		8,790	4,525	13,546
Representative Congress Dist 24					
(VOTE FOR) 1					
Frederica Wilson (DEM)	170,692	66.80	35,601	52,829	82,262
Jesus Gabriel Navarro (REP)	84,231	32.97	21,295	17,624	45,312
WRITE-IN	592	.23	141	174	277
Total	255,515		57,037	70,627	127,851
Over Votes	172		31	103	38
Under Votes	12,108		3,770	2,835	5,503
Representative Congress Dist 26					
(VOTE FOR) 1					
Mario Diaz-Balart (REP)	138,467	71.14	30,832	26,338	81,297
Joey Atkins (DEM)	56,161	28.86	12,148	20,558	23,455
Total	194,628		42,980	46,896	104,752
Over Votes	34		7	10	17
Under Votes	7,773		2,651	1,589	3,533

Victoria Lener 11/15/24
11/15/24
11/15/24

	TOTAL VOTES	%	ED	VBM	EV
Representative Congress Dist 27					
(VOTE FOR) 1					
Maria Elvira Salazar (REP)	199,159	60.38	34,168	44,214	120,777
Lucia Baez-Geller (DEM)	130,708	39.62	19,686	52,390	58,632
Total	329,867		53,854	96,604	179,409
Over Votes	74		10	19	45
Under Votes	11,661		2,948	3,479	5,234
Representative Congress Dist 28					
(VOTE FOR) 1					
Carlos A. Gimenez (REP)	183,428	64.98	32,403	33,074	117,951
Phil Ehr (DEM)	98,853	35.02	16,836	33,940	48,077
Total	282,281		49,239	67,014	166,028
Over Votes	47		6	16	25
Under Votes	10,435		2,680	2,466	5,289
State Senator District 37					
(VOTE FOR) 1					
Jason Pizzo (DEM)	19,904	56.57	3,556	7,783	8,565
Imtiaz Mohammad (REP)	15,282	43.43	3,868	3,202	8,212
Total	35,186		7,424	10,985	16,777
Over Votes	29		1	8	20
Under Votes	4,019		1,053	962	2,004
State Senator District 39					
(VOTE FOR) 1					
Bryan Avila (REP)	133,270	69.81	27,832	25,727	79,711
Charles A. Lewis I (DEM)	57,635	30.19	12,456	20,885	24,294
Total	190,905		40,288	46,612	104,005
Over Votes	20		6	6	8
Under Votes	12,596		3,944	2,282	6,370
State Representative Dist 106					
(VOTE FOR) 1					
Fabian Basabe (REP)	38,386	51.26	8,810	9,204	20,372
Joe Saunders (DEM)	35,229	47.04	6,615	14,011	14,603
Mo Saunders Scott (NPA)	1,271	1.70	425	280	566
Total	74,886		15,850	23,495	35,541
Over Votes	12		2	6	4
Under Votes	5,219		1,594	1,377	2,248
State Representative Dist 110					
(VOTE FOR) 1					
Tom Fabricio (REP)	49,881	71.17	10,028	8,937	30,916
Stanley "J.P." Jean-Poix (DEM)	20,207	28.83	4,323	7,184	8,700
Total	70,088		14,351	16,121	39,616
Over Votes	7		0	2	5
Under Votes	4,298		1,359	757	2,182

	TOTAL VOTES	%	ED	VBM	EV
State Representative Dist 111					
(VOTE FOR) 1					
David Borrero (REP)	45,942	67.38	9,427	8,846	27,669
Laura F. Kelley (DEM)	22,238	32.62	4,330	8,662	9,246
Total	68,180		13,757	17,508	36,915
Over Votes	8		2	3	3
Under Votes	4,053		1,199	845	2,009
State Representative Dist 112					
(VOTE FOR) 1					
Alex Rizo (REP)	40,199	72.95	8,828	8,516	22,855
Jacqueline "Jackie" Gil-Abarzua (DEM)	14,908	27.05	3,570	5,558	5,780
Total	55,107		12,398	14,074	28,635
Over Votes	7		0	4	3
Under Votes	3,994		1,342	608	2,044
State Representative Dist 113					
(VOTE FOR) 1					
Vicki Lopez (REP)	33,461	54.66	7,336	7,770	18,355
Jacqueline "Jackie" Gross-Kellogg (DEM)	27,754	45.34	4,862	10,082	12,810
Total	61,215		12,198	17,852	31,165
Over Votes	13		4	5	4
Under Votes	3,694		1,093	880	1,721
State Representative Dist 114					
(VOTE FOR) 1					
Demi Busatta Cabrera (REP)	46,249	58.36	7,617	11,328	27,304
Matthew John Bornstein (DEM)	32,994	41.64	4,841	13,320	14,833
Total	79,243		12,458	24,648	42,137
Over Votes	23		2	9	12
Under Votes	4,719		1,059	1,336	2,324
State Representative Dist 115					
(VOTE FOR) 1					
Omar Blanco (REP)	54,952	59.35	8,477	11,754	34,721
Norma Perez Schwartz (DEM)	37,639	40.65	4,636	15,707	17,296
Total	92,591		13,113	27,461	52,017
Over Votes	12		0	6	6
Under Votes	4,621		943	1,314	2,364
State Representative Dist 116					
(VOTE FOR) 1					
Daniel A. Perez (REP)	52,964	68.72	7,940	11,742	33,282
Nicolas Ramos (DEM)	24,110	31.28	3,830	9,320	10,960
Total	77,074		11,770	21,062	44,242
Over Votes	17		5	5	7
Under Votes	4,381		1,031	974	2,376

	TOTAL VOTES	%	ED	VBM	EV
State Representative Dist 117					
(VOTE FOR) 1					
Kevin Chambliss (DEM)	32,347	52.88	6,617	9,222	16,508
Beatrice Slawson (REP)	28,823	47.12	5,629	4,168	19,026
Total	61,170		12,246	13,390	35,534
Over Votes	8		1	3	4
Under Votes	3,468		880	611	1,977
State Representative Dist 118					
(VOTE FOR) 1					
Mike Redondo (REP)	58,355	68.33	9,836	11,525	36,994
Joel Vodola (DEM)	27,046	31.67	4,478	10,281	12,287
Total	85,401		14,314	21,806	49,281
Over Votes	10		0	4	6
Under Votes	4,773		1,227	1,083	2,463
State Representative Dist 119					
(VOTE FOR) 1					
Juan Carlos Porras (REP)	54,735	64.62	8,330	9,816	36,589
Marcos Reyes (DEM)	29,967	35.38	4,224	10,840	14,903
Total	84,702		12,554	20,656	51,492
Over Votes	22		2	5	15
Under Votes	3,923		870	888	2,165
State Representative Dist 120					
(VOTE FOR) 1					
James "Jim" Vernon Mooney Jr. (REP)	19,962	61.11	4,224	3,045	12,693
Michael Travis (DEM)	12,703	38.89	2,767	3,685	6,251
Total	32,665		6,991	6,730	18,944
Over Votes	2		0	0	2
Under Votes	1,709		478	320	911
Clerk of the Circuit Court and Comptroller					
(VOTE FOR) 1					
Juan Fernandez-Barquin (REP)	580,202	55.40	111,303	117,439	351,460
Annette Taddeo (DEM)	464,947	44.40	86,800	161,430	216,717
WRITE-IN.	2,074	.20	567	540	967
Total	1047,223		198,670	279,409	569,144
Over Votes	579		100	281	198
Under Votes	54,339		16,443	9,514	28,382
Sheriff					
(VOTE FOR) 1					
Rosanna "Rosie" Cordero-Stutz (REP)	583,505	55.63	112,486	117,576	353,443
James Reyes (DEM)	465,369	44.37	86,519	162,218	216,632
Total	1048,874		199,005	279,794	570,075
Over Votes	263		46	83	134
Under Votes	53,004		16,162	9,327	27,515

	TOTAL VOTES	%	ED	VBM	EV
Property Appraiser					
(VOTE FOR) 1					
Tomas Regalado (REP)	595,819	57.00	113,911	123,828	358,080
Marisol Zenteno (DEM)	449,427	43.00	84,303	154,854	210,270
Total	1045,246		198,214	278,682	568,350
Over Votes	143		28	42	73
Under Votes	56,752		16,971	10,480	29,301
Tax Collector					
(VOTE FOR) 1					
Dariel Fernandez (REP)	576,892	55.64	111,122	115,634	350,136
David Richardson (DEM)	459,864	44.36	84,980	160,685	214,199
Total	1036,756		196,102	276,319	564,335
Over Votes	137		28	45	64
Under Votes	65,248		19,083	12,840	33,325
Supervisor of Elections					
(VOTE FOR) 1					
Alina Garcia (REP)	580,061	55.84	112,541	115,541	351,979
Juan-Carlos "J.C." Planas (DEM)	458,770	44.16	83,316	162,766	212,688
Total	1038,831		195,857	278,307	564,667
Over Votes	119		23	48	48
Under Votes	63,191		19,333	10,849	33,009
Justice Supreme Court Renatha Francis					
(VOTE FOR) 1					
Yes	625,479	65.39	121,365	148,235	355,879
No.	331,121	34.61	58,688	110,944	161,489
Total	956,600		180,053	259,179	517,368
Over Votes	497		57	193	247
Under Votes	145,044		35,103	29,832	80,109
Justice Supreme Court Meredith Sasso					
(VOTE FOR) 1					
Yes	607,862	63.99	117,480	143,339	347,043
No.	342,114	36.01	60,736	115,042	166,336
Total	949,976		178,216	258,381	513,379
Over Votes	232		28	92	112
Under Votes	151,933		36,969	30,731	84,233
3rdDist Court Appeal Kevin M. Emas					
(VOTE FOR) 1					
Yes	698,469	73.98	126,132	193,805	378,532
No.	245,658	26.02	51,545	62,784	131,329
Total	944,127		177,677	256,589	509,861
Over Votes	374		54	137	183
Under Votes	157,640		37,482	32,478	87,680

	TOTAL VOTES	%	ED	VBM	EV
3rdDist Court Appeal Ivan F. Fernandez					
(VOTE FOR) 1					
Yes	663,794	70.52	123,861	170,202	369,731
No.	277,450	29.48	52,952	86,146	138,352
Total	941,244		176,813	256,348	508,083
Over Votes	243		30	96	117
Under Votes	160,654		38,370	32,760	89,524
3rdDist Court Appeal Norma Shepard Lindsey					
(VOTE FOR) 1					
Yes	641,220	68.49	121,574	167,455	352,191
No.	295,041	31.51	54,387	87,489	153,165
Total	936,261		175,961	254,944	505,356
Over Votes	218		35	85	98
Under Votes	165,662		39,217	34,175	92,270
County Judge Group 29					
(VOTE FOR) 1					
Christopher Benjamin.	476,814	51.90	89,725	143,271	243,818
Alina Salcines Restrepo.	441,914	48.10	82,214	109,115	250,585
Total	918,728		171,939	252,386	494,403
Over Votes	407		51	134	222
Under Votes	183,006		43,223	36,684	103,099
County Commissioner District 7					
(VOTE FOR) 1					
Raquel A. Regalado	57,335	56.60	8,612	16,118	32,605
Cindy Lerner	43,960	43.40	6,250	17,436	20,274
Total	101,295		14,862	33,554	52,879
Over Votes	54		4	21	29
Under Votes	12,956		2,812	3,208	6,936
School Board Member District 3					
(VOTE FOR) 1					
Joseph "Joe" Geller	60,740	54.84	11,563	21,751	27,426
Martin Karp.	50,021	45.16	10,526	14,193	25,302
Total	110,761		22,089	35,944	52,728
Over Votes	62		11	23	28
Under Votes	24,561		6,405	6,152	12,004
School Board Member District 7					
(VOTE FOR) 1					
Mary Blanco.	86,182	67.88	14,315	17,695	54,172
Maxeme "Max" Tuchman.	40,788	32.12	6,073	15,514	19,201
Total	126,970		20,388	33,209	73,373
Over Votes	31		2	15	14
Under Votes	17,470		3,477	3,315	10,678

	TOTAL VOTES	%	ED	VBM	EV
Aventura City Commissioner Seat 1					
(VOTE FOR) 1					
Gustavo F. Blachman	7,075	47.93	1,230	2,185	3,660
Michael Isaac Jacobs.	5,979	40.51	962	2,145	2,872
Alberto Zaltzberg.	1,707	11.56	278	584	845
Total	14,761		2,470	4,914	7,377
Over Votes	11		3	4	4
Under Votes	3,680		776	1,110	1,794
Aventura City Commissioner Seat 2					
(VOTE FOR) 1					
Cindy Orlinsky.	9,796	67.39	1,624	3,312	4,860
Gary Pyott	4,740	32.61	811	1,590	2,339
Total	14,536		2,435	4,902	7,199
Over Votes	7		2	5	0
Under Votes	3,909		812	1,121	1,976
Bal Harbour Council Member District 4					
(VOTE FOR) 1					
Alejandro Levy.	734	57.70	163	275	296
David Albaum	538	42.30	119	213	206
Total	1,272		282	488	502
Over Votes	0		0	0	0
Under Votes	281		65	99	117
Biscayne Park Commissioner					
(VOTE FOR) 3					
MacDonald Kennedy.	802	39.39	255	272	275
Ryan Huntington	801	39.34	278	249	274
Daniel R. Samaria.	433	21.27	160	106	167
Total	2,036		693	627	716
Over Votes	0		0	0	0
Under Votes	2,881		1,014	798	1,069
Cutler Bay Council Member Seat 2					
(VOTE FOR) 1					
Suzy Lord	10,077	52.27	1,439	3,278	5,360
Brook De Melo Gomes	9,201	47.73	1,543	1,848	5,810
Total	19,278		2,982	5,126	11,170
Over Votes	5		0	2	3
Under Votes	3,096		605	580	1,911
Doral Mayor					
(VOTE FOR) 1					
Christi Fraga	20,405	79.25	4,030	5,062	11,313
Roxanna Garay	5,344	20.75	1,018	1,579	2,747
Total	25,749		5,048	6,641	14,060
Over Votes	9		1	5	3
Under Votes	1,755		451	282	1,022

	TOTAL VOTES	%	ED	VBM	EV
Doral Councilmember Seat 1					
(VOTE FOR) 1					
Rafael Pineyro.	14,996	60.37	2,811	3,602	8,583
Ivette Gonzalez Petkovich	9,845	39.63	2,062	2,860	4,923
Total	24,841		4,873	6,462	13,506
Over Votes	7		0	3	4
Under Votes	2,665		627	463	1,575
Doral Councilmember Seat 3					
(VOTE FOR) 1					
Nicole Reinoso.	10,428	44.66	1,977	2,858	5,593
Juan Carlos Esquivel.	8,324	35.65	1,696	1,887	4,741
Irina Vilarino.	4,600	19.70	966	1,242	2,392
Total	23,352		4,639	5,987	12,726
Over Votes	9		1	2	6
Under Votes	4,152		860	939	2,353
El Portal Councilperson Seat 4					
(VOTE FOR) 1					
Charles Winters	518	50.34	143	147	228
Luis M. Pirela.	511	49.66	190	134	187
Total	1,029		333	281	415
Over Votes	0		0	0	0
Under Votes	135		34	26	75
Key Biscayne Village Council					
(VOTE FOR) 3					
Nancy Stoner	3,201	23.82	664	1,262	1,275
Michael F. Bracken	2,391	17.79	495	950	946
Franklin H. Caplan	2,376	17.68	469	967	940
Nicolas Lopez-Jenkins	2,152	16.01	514	715	923
Mark E. Fried	2,004	14.91	389	812	803
Charles Hyatt Collins	1,314	9.78	265	475	574
Total	13,438		2,796	5,181	5,461
Over Votes	30		3	18	9
Under Votes	6,368		1,839	1,764	2,765
Medley Mayor					
(VOTE FOR) 1					
Lily Stefano	321	57.42	75	173	73
Roberto Martell	238	42.58	95	50	93
Total	559		170	223	166
Over Votes	1		1	0	0
Under Votes	16		4	1	11

	TOTAL VOTES	%	ED	VBM	EV
Medley Council Member					
(VOTE FOR) 2					
Arturo "Artie" Jinete	259	25.47	86	102	71
Lourdes Rodriguez.	258	25.37	44	164	50
Ernesto Fuster.	180	17.70	53	92	35
Karina Pacheco.	163	16.03	63	36	64
Ivan Pacheco	157	15.44	56	39	62
Total	1,017		302	433	282
Over Votes	0		0	0	0
Under Votes	135		48	15	72
Miami Gardens Council Member Seat 5					
(VOTE FOR) 1					
Linda Julien	25,945	61.33	5,042	7,220	13,683
Karen Hunter-Jackson.	16,357	38.67	3,904	4,226	8,227
Total	42,302		8,946	11,446	21,910
Over Votes	26		2	10	14
Under Votes	3,448		832	660	1,956
Miami Lakes Mayor					
(VOTE FOR) 1					
Josh Dieguez	7,320	46.60	949	1,926	4,445
Tony Fernandez.	6,593	41.97	957	1,596	4,040
Yuniett Gonzalez	1,795	11.43	343	404	1,048
Total	15,708		2,249	3,926	9,533
Over Votes	7		1	0	6
Under Votes	1,149		238	233	678
Miami Lakes Councilmember Seat 1					
(VOTE FOR) 1					
Angelo Cuadra Garcia.	8,015	54.26	1,118	1,822	5,075
Mario O. Pinera Jr.	6,756	45.74	976	1,908	3,872
Total	14,771		2,094	3,730	8,947
Over Votes	2		0	0	2
Under Votes	2,091		394	429	1,268
N.Bay Village Treasure Island Commissioner					
(VOTE FOR) 1					
Doris Acosta	1,602	56.61	419	444	739
Jose R. Parada Jr.	1,228	43.39	362	307	559
Total	2,830		781	751	1,298
Over Votes	1		0	1	0
Under Votes	359		109	71	179
North Miami Mayor					
** RECOUNT SEE ADDENDUM **					
(VOTE FOR) 1					
Alix Desulme	7,202	36.81	1,112	2,230	3,860
Hector Medina	4,422	22.60	951	1,191	2,280
Daphne Campbell	4,391	22.44	948	827	2,616
Naomi Esther Blemur	3,549	18.14	901	744	1,904
Total	19,564		3,912	4,992	10,660
Over Votes	26		7	12	7
Under Votes	1,753		440	340	973

	TOTAL VOTES	%	ED	VBM	EV
North Miami Councilperson District 1					
(VOTE FOR) 1					
Kevin A. Burns.	1,926	43.02	389	600	937
Vanessa Pierre.	1,366	30.51	370	270	726
Evan A. Shields	607	13.56	132	219	256
Jessica Wolland	578	12.91	123	171	284
Total	4,477		1,014	1,260	2,203
Over Votes	0		0	0	0
Under Votes	675		174	146	355
North Miami Councilperson District 4					
** RECOUNT SEE ADDENDUM **					
(VOTE FOR) 1					
Pierre Frantz Charles	2,775	44.03	488	770	1,517
Daniel Calixte.	1,033	16.39	200	244	589
Charlie Nacivre Charles.	1,020	16.18	193	213	614
Beverly Hilton.	900	14.28	168	303	429
Bethynel "Betty" Vega	575	9.12	159	174	242
Total	6,303		1,208	1,704	3,391
Over Votes	9		1	7	1
Under Votes	473		105	82	286
North Miami Beach Group 1 Mayor					
(VOTE FOR) 1					
Michael Joseph.	7,374	55.50	1,843	1,850	3,681
Evan S. Piper	5,913	44.50	1,504	1,831	2,578
Total	13,287		3,347	3,681	6,259
Over Votes	8		1	4	3
Under Votes	1,846		583	309	954
North Miami Beach Group 3 Commissioner					
(VOTE FOR) 1					
Daniela Jean	6,401	49.10	1,522	1,846	3,033
Margaret Mary "Margie" Love	3,419	26.23	838	1,018	1,563
Hubert Dube.	3,216	24.67	905	727	1,584
Total	13,036		3,265	3,591	6,180
Over Votes	10		2	6	2
Under Votes	2,095		664	397	1,034
North Miami Beach Group 5 Commissioner					
(VOTE FOR) 1					
McKenzie Fleurimond	7,415	60.98	1,827	2,075	3,513
Ketley Joachim.	4,745	39.02	1,188	1,330	2,227
Total	12,160		3,015	3,405	5,740
Over Votes	5		1	4	0
Under Votes	2,976		915	585	1,476

	TOTAL VOTES	%	ED	VBM	EV
North Miami Beach Group 7 Commissioner					
(VOTE FOR) 1					
Paule Villard	3,825	30.17	759	1,133	1,933
Lynn Su	3,235	25.51	762	1,149	1,324
Maggy Belizaire Lopez	2,339	18.45	689	485	1,165
Eunice Flowers.	1,847	14.57	474	463	910
Ellis Keeter	1,434	11.31	489	295	650
Total	12,680		3,173	3,525	5,982
Over Votes	16		4	8	4
Under Votes	2,445		754	461	1,230
Opa-locka Commissioners					
(VOTE FOR) 2					
Joseph L. Kelley	1,719	31.68	529	454	736
Luis Santiago	1,000	18.43	257	213	530
Chris Davis.	851	15.68	248	248	355
Audrey Dominguez	746	13.75	200	243	303
Brian Dennis	634	11.68	212	180	242
Retevea Bain-Walden	476	8.77	102	151	223
Total	5,426		1,548	1,489	2,389
Over Votes	10		6	4	0
Under Votes	3,364		954	651	1,759
Palmetto Bay Vice Mayor					
(VOTE FOR) 1					
Mark Merwitzer.	6,683	50.29	860	2,247	3,576
Leanne Tellam	6,605	49.71	975	2,252	3,378
Total	13,288		1,835	4,499	6,954
Over Votes	8		0	5	3
Under Votes	1,443		254	364	825
Palmetto Bay Council Member Seat 2					
(VOTE FOR) 1					
Steve Cody	7,522	57.72	1,004	2,754	3,764
David M. Singer	5,509	42.28	792	1,670	3,047
Total	13,031		1,796	4,424	6,811
Over Votes	10		1	7	2
Under Votes	1,698		292	437	969
Pinecrest Councilmember Seat 3					
(VOTE FOR) 1					
Shannon del Prado.	6,746	66.30	674	2,902	3,170
Ralph Sanchez	3,429	33.70	449	982	1,998
Total	10,175		1,123	3,884	5,168
Over Votes	4		0	1	3
Under Votes	905		148	285	472
South Miami Mayor					
(VOTE FOR) 1					
Javier Fernandez	4,970	100.00	907	1,741	2,322
Total	4,970		907	1,741	2,322
Over Votes	0		0	0	0
Under Votes	1,240		271	352	617

	TOTAL VOTES	%	ED	VBM	EV
South Miami Commissioner Group II					
(VOTE FOR) 1					
Danny Rodriguez	2,893	51.69	563	1,059	1,271
Daniel Guerra	2,704	48.31	509	873	1,322
Total	5,597		1,072	1,932	2,593
Over Votes	8		0	4	4
Under Votes	605		106	157	342
South Miami Commissioner Group III					
(VOTE FOR) 1					
Brian Corey.	3,976	100.00	747	1,362	1,867
Total	3,976		747	1,362	1,867
Over Votes	0		0	0	0
Under Votes	2,234		431	731	1,072
Sunny Isles Beach Commissioner Seat 1					
(VOTE FOR) 1					
Jerry Joseph	2,855	38.57	772	849	1,234
Patricia Alvarez	2,630	35.53	848	642	1,140
George Bardmesser.	1,355	18.31	428	281	646
Iracilda Lichtinger	562	7.59	147	208	207
Total	7,402		2,195	1,980	3,227
Over Votes	8		2	1	5
Under Votes	1,763		629	418	716
Sunny Isles Beach Commissioner Seat 3					
(VOTE FOR) 1					
Fabiola Stuyvesant	3,777	51.32	1,132	1,030	1,615
Greg Capra	3,583	48.68	1,066	939	1,578
Total	7,360		2,198	1,969	3,193
Over Votes	7		2	2	3
Under Votes	1,806		626	428	752
Virginia Gardens Council					
(VOTE FOR) 3					
Gabriel Fernandez.	545	39.78	152	178	215
Debra A. Conover	421	30.73	104	156	161
Richard L. Block	404	29.49	121	125	158
Total	1,370		377	459	534
Over Votes	0		0	0	0
Under Votes	2,029		682	450	897
Cutler Cay Comm Dev Dist Seat 3					
(VOTE FOR) 1					
Albert Collazo.	513	70.18	148	96	269
Christopher T. Musser	218	29.82	54	56	108
Total	731		202	152	377
Over Votes	1		0	1	0
Under Votes	142		39	30	73

	TOTAL VOTES	%	ED	VBM	EV
Cutler Cay Comm Dev Dist Seat 4					
(VOTE FOR) 1					
Alexandra Penn Williams.	412	59.11	127	91	194
Donna Fishbein.	285	40.89	64	56	165
Total	697		191	147	359
Over Votes	1		0	1	0
Under Votes	176		50	35	91
Downtown Doral South Comm Dev Dist Seat 4					
(VOTE FOR) 1					
Francisco Bird.	441	49.72	86	105	250
Adolfo William Alfonso	278	31.34	61	49	168
Guillermo J. Silva Malave	168	18.94	32	42	94
Total	887		179	196	512
Over Votes	0		0	0	0
Under Votes	216		45	40	131
Downtown Doral South Comm Dev Dist Seat 5					
(VOTE FOR) 1					
Lidy C. Hernandez Perez.	447	50.68	99	94	254
Jaime Mercado	435	49.32	79	100	256
Total	882		178	194	510
Over Votes	0		0	0	0
Under Votes	221		46	42	133
Islands at Doral III Comm Dev Dist Seat 4					
(VOTE FOR) 1					
Victoria Gonzalez.	1,037	68.63	274	199	564
Gerardo A. Verde	474	31.37	122	90	262
Total	1,511		396	289	826
Over Votes	0		0	0	0
Under Votes	312		78	51	183
Landmark At Doral Comm Dev Dist Seat 5					
(VOTE FOR) 1					
Juan Javier De Maqua.	525	63.18	114	75	336
Yasenka Peterson	306	36.82	50	90	166
Total	831		164	165	502
Over Votes	1		1	0	0
Under Votes	197		48	21	128
Majorca Isles Comm Dev Dist Seat 1					
(VOTE FOR) 1					
Reginald Andre.	304	45.04	58	67	179
Theodis Tyrone Kendrick.	214	31.70	46	39	129
Nathan Price	157	23.26	42	42	73
Total	675		146	148	381
Over Votes	0		0	0	0
Under Votes	82		20	15	47

	TOTAL VOTES	%	ED	VBM	EV
Majorca Isles Comm Dev Dist Seat 2					
(VOTE FOR) 1					
Tamara Price	341	50.67	73	84	184
Eric Moss	332	49.33	72	61	199
Total	673		145	145	383
Over Votes	0		0	0	0
Under Votes	84		21	18	45
ConsAmend1 Partisan Election SchBrd Members					
(VOTE FOR) 1					
Yes	569,902	57.86	113,979	127,747	328,176
No.	415,078	42.14	71,115	134,356	209,607
Total	984,980		185,094	262,103	537,783
Over Votes	435		48	146	241
Under Votes	116,726		30,071	26,955	59,700
ConsAmend2 Right to Fish and Hunt					
(VOTE FOR) 1					
Yes	659,670	65.45	130,886	155,925	372,859
No.	348,269	34.55	60,016	110,766	177,487
Total	1007,939		190,902	266,691	550,346
Over Votes	492		69	162	261
Under Votes	93,710		24,242	22,351	47,117
ConsAmend3 Adult Personal Use of Marijuana					
(VOTE FOR) 1					
No.	525,479	50.74	93,051	123,439	308,989
Yes	510,124	49.26	104,277	150,623	255,224
Total	1035,603		197,328	274,062	564,213
Over Votes	564		61	216	287
Under Votes	65,974		17,824	14,926	33,224
ConsAmend4 Limit Govt Interference Abortion					
(VOTE FOR) 1					
Yes	618,188	58.69	124,131	192,050	302,007
No.	435,185	41.31	78,777	86,454	269,954
Total	1053,373		202,908	278,504	571,961
Over Votes	886		111	303	472
Under Votes	44,963		12,167	7,737	25,059
ConsAmend5 Adjust Value Homestead Exempt					
(VOTE FOR) 1					
Yes	727,312	71.54	137,048	191,187	399,077
No.	289,333	28.46	56,229	80,094	153,010
Total	1016,645		193,277	271,281	552,087
Over Votes	519		56	179	284
Under Votes	82,058		21,853	15,084	45,121

	TOTAL VOTES	%	ED	VBM	EV
ConsAmend6 Repeal Campaign Finance Req					
(VOTE FOR) 1					
Yes	518,693	52.21	102,742	120,741	295,210
No.	474,734	47.79	85,461	146,038	243,235
Total	993,427		188,203	266,779	538,445
Over Votes	719		85	232	402
Under Votes	105,076		26,898	19,533	58,645
County Nonbinding Straw Ballot Public Wi-Fi					
(VOTE FOR) 1					
Yes	777,088	76.73	152,295	214,066	410,727
No.	235,691	23.27	41,575	56,310	137,806
Total	1012,779		193,870	270,376	548,533
Over Votes	389		57	105	227
Under Votes	86,054		21,259	16,063	48,732
BalHarbour Levy Homeless/Domestic Abuse Tax					
(VOTE FOR) 1					
No.	899	67.34	207	339	353
Yes	436	32.66	102	162	172
Total	1,335		309	501	525
Over Votes	2		1	0	1
Under Votes	204		37	75	92
CutlerBay Public Engagement Modes of Comm					
(VOTE FOR) 1					
Yes	16,925	83.35	2,602	4,589	9,734
No.	3,380	16.65	559	638	2,183
Total	20,305		3,161	5,227	11,917
Over Votes	3		1	0	2
Under Votes	2,038		425	449	1,164
CutlerBay Town Laws Environment Stewardship					
(VOTE FOR) 1					
Yes	17,230	84.37	2,732	4,611	9,887
No.	3,193	15.63	448	644	2,101
Total	20,423		3,180	5,255	11,988
Over Votes	5		2	2	1
Under Votes	1,918		405	419	1,094
Doral Clarify Form of Government					
(VOTE FOR) 1					
No.	12,861	53.98	2,344	3,519	6,998
Yes	10,965	46.02	2,306	2,666	5,993
Total	23,826		4,650	6,185	12,991
Over Votes	10		0	1	9
Under Votes	3,629		850	699	2,080

	TOTAL VOTES	%	ED	VBM	EV
Doral Create Committees/Appointment Members					
(VOTE FOR) 1					
Yes	12,868	54.34	2,632	3,437	6,799
No.	10,813	45.66	1,984	2,762	6,067
Total	23,681		4,616	6,199	12,866
Over Votes	9		1	0	8
Under Votes	3,775		883	686	2,206
Doral Council Auth Mayor/Govern Entities					
(VOTE FOR) 1					
Yes	14,666	61.59	2,946	3,919	7,801
No.	9,147	38.41	1,719	2,286	5,142
Total	23,813		4,665	6,205	12,943
Over Votes	7		0	0	7
Under Votes	3,645		835	680	2,130
Doral Service Mayor Position Councilmember					
(VOTE FOR) 1					
Yes	15,406	64.36	2,929	4,337	8,140
No.	8,531	35.64	1,737	1,912	4,882
Total	23,937		4,666	6,249	13,022
Over Votes	11		0	1	10
Under Votes	3,517		834	635	2,048
Doral Mayor and Councilmember Compensation					
(VOTE FOR) 1					
Yes	12,811	53.41	2,595	3,205	7,011
No.	11,174	46.59	2,078	3,064	6,032
Total	23,985		4,673	6,269	13,043
Over Votes	10		1	3	6
Under Votes	3,470		826	613	2,031
Doral Process Appoint City Manager					
(VOTE FOR) 1					
Yes	16,189	68.71	3,084	4,540	8,565
No.	7,372	31.29	1,480	1,655	4,237
Total	23,561		4,564	6,195	12,802
Over Votes	3		1	0	2
Under Votes	3,901		935	690	2,276
Doral Process Appoint City Boards/Agencies					
(VOTE FOR) 1					
Yes	15,132	62.02	2,978	4,147	8,007
No.	9,266	37.98	1,794	2,222	5,250
Total	24,398		4,772	6,369	13,257
Over Votes	9		1	1	7
Under Votes	3,038		722	503	1,813

	TOTAL VOTES	%	ED	VBM	EV
Doral Elimination Run-off Elections					
(VOTE FOR) 1					
Yes	12,775	51.33	2,613	3,338	6,824
No.	12,115	48.67	2,291	3,122	6,702
Total	24,890		4,904	6,460	13,526
Over Votes	13		1	5	7
Under Votes	2,542		590	408	1,544
Doral Appoint Chrtr Rev Comm/Req Members					
(VOTE FOR) 1					
No.	12,804	52.90	2,439	3,336	7,029
Yes	11,398	47.10	2,274	3,026	6,098
Total	24,202		4,713	6,362	13,127
Over Votes	11		1	5	5
Under Votes	3,232		781	506	1,945
Doral Ofc Chrtr Enforce/Ofc Insp General					
(VOTE FOR) 1					
Yes	19,042	77.97	3,620	5,477	9,945
No.	5,381	22.03	1,150	945	3,286
Total	24,423		4,770	6,422	13,231
Over Votes	9		0	1	8
Under Votes	3,013		725	450	1,838
Mia Continuous Residency Mayor/Commissioner					
(VOTE FOR) 1					
Yes	111,834	87.74	23,476	32,051	56,307
No.	15,626	12.26	3,996	3,191	8,439
Total	127,460		27,472	35,242	64,746
Over Votes	48		6	19	23
Under Votes	19,604		5,452	3,643	10,509
Mia Rev Develop Parrot Jungle Watson Island					
(VOTE FOR) 1					
Yes	74,386	58.57	16,865	20,206	37,315
No.	52,619	41.43	10,676	14,772	27,171
Total	127,005		27,541	34,978	64,486
Over Votes	81		15	29	37
Under Votes	20,026		5,374	3,897	10,755
Mia Rev Mixed-Use Leases on Watson Island					
(VOTE FOR) 1					
Yes	77,582	61.89	17,724	20,851	39,007
No.	47,780	38.11	9,433	13,795	24,552
Total	125,362		27,157	34,646	63,559
Over Votes	47		6	14	27
Under Votes	21,703		5,767	4,244	11,692

	TOTAL VOTES	%	ED	VBM	EV
Mia Change Runoff Date					
(VOTE FOR) 1					
Yes	79,929	63.59	17,576	22,641	39,712
No.	45,773	36.41	9,564	12,134	24,075
Total	125,702		27,140	34,775	63,787
Over Votes	30		6	6	18
Under Votes	21,380		5,784	4,123	11,473
MiaBch CitizensBillRights Ethics Commission					
(VOTE FOR) 1					
Yes	24,604	81.27	4,609	8,161	11,834
No.	5,670	18.73	1,227	1,547	2,896
Total	30,274		5,836	9,708	14,730
Over Votes	15		0	12	3
Under Votes	6,145		1,639	1,525	2,981
MiaBch CitizensBillRights CirCourt/Forfeit					
(VOTE FOR) 1					
Yes	20,157	69.66	3,772	6,616	9,769
No.	8,779	30.34	1,727	2,749	4,303
Total	28,936		5,499	9,365	14,072
Over Votes	11		1	5	5
Under Votes	7,487		1,975	1,875	3,637
MiaBch Sale/Lease City property agreements					
(VOTE FOR) 1					
Yes	22,451	75.91	4,171	7,501	10,779
No.	7,123	24.09	1,483	2,025	3,615
Total	29,574		5,654	9,526	14,394
Over Votes	6		1	3	2
Under Votes	6,854		1,820	1,716	3,318
MiaBch Runoff Election Date/Install/OfcTerm					
(VOTE FOR) 1					
Yes	22,492	74.62	4,220	7,522	10,750
No.	7,649	25.38	1,614	2,194	3,841
Total	30,141		5,834	9,716	14,591
Over Votes	10		2	4	4
Under Votes	6,208		1,639	1,465	3,104
MiaBch Public Hearings/Notice Ordinances					
(VOTE FOR) 1					
Yes	23,411	76.31	4,592	7,544	11,275
No.	7,266	23.69	1,396	2,321	3,549
Total	30,677		5,988	9,865	14,824
Over Votes	12		1	8	3
Under Votes	5,670		1,486	1,312	2,872

	TOTAL VOTES	%	ED	VBM	EV
MiaBch Vacancies in City Commission					
(VOTE FOR) 1					
Yes	20,925	69.02	4,278	6,686	9,961
No.	9,393	30.98	1,613	3,077	4,703
Total	30,318		5,891	9,763	14,664
Over Votes	9		1	5	3
Under Votes	6,032		1,583	1,417	3,032
MiaBch Charter Language to Law/Current Use					
(VOTE FOR) 1					
Yes	24,012	83.03	4,375	8,192	11,445
No.	4,909	16.97	1,114	1,158	2,637
Total	28,921		5,489	9,350	14,082
Over Votes	4		0	1	3
Under Votes	7,434		1,986	1,834	3,614
MiaGardens City Manager Residency Require					
(VOTE FOR) 1					
Yes	23,511	56.49	5,247	5,823	12,441
No.	18,108	43.51	3,534	5,325	9,249
Total	41,619		8,781	11,148	21,690
Over Votes	17		4	4	9
Under Votes	4,002		986	843	2,173
MiaSprings Terms of Ofc/November Elections					
(VOTE FOR) 1					
No.	3,694	54.58	1,108	1,080	1,506
Yes	3,074	45.42	904	749	1,421
Total	6,768		2,012	1,829	2,927
Over Votes	1		0	0	1
Under Votes	567		221	108	238
NBayVillage Public Notice Requirements					
(VOTE FOR) 1					
Yes	2,347	82.21	637	628	1,082
No.	508	17.79	131	130	247
Total	2,855		768	758	1,329
Over Votes	1		0	0	1
Under Votes	327		122	59	146
NBayVillage Employees Village Clerk's Ofc					
(VOTE FOR) 1					
Yes	2,391	84.67	639	664	1,088
No.	433	15.33	120	96	217
Total	2,824		759	760	1,305
Over Votes	1		0	0	1
Under Votes	358		131	57	170

	TOTAL VOTES	%	ED	VBM	EV
NBayVillage Cont Residency Requirement					
(VOTE FOR) 1					
Yes	2,679	92.70	718	723	1,238
No.	211	7.30	67	45	99
Total	2,890		785	768	1,337
Over Votes	1		0	0	1
Under Votes	292		105	49	138
NBayVillage Qualifying Period					
(VOTE FOR) 1					
Yes	2,238	82.43	604	616	1,018
No.	477	17.57	134	115	228
Total	2,715		738	731	1,246
Over Votes	0		0	0	0
Under Votes	468		152	86	230
NBayVillage Single Family Property					
(VOTE FOR) 1					
Yes	2,253	78.53	605	621	1,027
No.	616	21.47	176	142	298
Total	2,869		781	763	1,325
Over Votes	0		0	0	0
Under Votes	314		109	54	151
NBayVillage Limit On Village Debt					
(VOTE FOR) 1					
Yes	1,959	71.06	559	489	911
No.	798	28.94	192	242	364
Total	2,757		751	731	1,275
Over Votes	0		0	0	0
Under Votes	426		139	86	201
NBayVillage Chrtr NonSubstantive/TechUpdate					
(VOTE FOR) 1					
Yes	2,177	78.68	590	609	978
No.	590	21.32	155	138	297
Total	2,767		745	747	1,275
Over Votes	0		0	0	0
Under Votes	416		145	70	201
Pinecrest Term Limits Mayor/Councilmember					
(VOTE FOR) 1					
No.	6,036	58.78	620	2,349	3,067
Yes	4,233	41.22	529	1,543	2,161
Total	10,269		1,149	3,892	5,228
Over Votes	10		0	5	5
Under Votes	782		122	251	409

	TOTAL VOTES	%	ED	VBM	EV
Pinecrest Partial Terms Ofc Less Two Years					
(VOTE FOR) 1					
No.	5,521	54.52	629	2,014	2,878
Yes	4,605	45.48	498	1,843	2,264
Total	10,126		1,127	3,857	5,142
Over Votes	7		0	4	3
Under Votes	928		144	287	497
Pinecrest Calc Term Limits/Gap in Service					
(VOTE FOR) 1					
No.	6,188	61.97	661	2,358	3,169
Yes	3,797	38.03	446	1,455	1,896
Total	9,985		1,107	3,813	5,065
Over Votes	4		1	2	1
Under Votes	1,072		163	333	576
Pinecrest Method Filling Vacancies in Ofc					
(VOTE FOR) 1					
Yes	5,306	53.55	597	2,023	2,686
No.	4,603	46.45	504	1,754	2,345
Total	9,909		1,101	3,777	5,031
Over Votes	5		0	4	1
Under Votes	1,147		170	367	610
Pinecrest Update Chrtr Elections Timelines					
(VOTE FOR) 1					
Yes	6,429	65.08	682	2,586	3,161
No.	3,449	34.92	406	1,201	1,842
Total	9,878		1,088	3,787	5,003
Over Votes	5		0	4	1
Under Votes	1,178		183	357	638
SouthMia Purchase Limit Ordinance City Comm					
(VOTE FOR) 1					
Yes	3,271	59.66	644	1,076	1,551
No.	2,212	40.34	382	786	1,044
Total	5,483		1,026	1,862	2,595
Over Votes	2		0	2	0
Under Votes	713		154	217	342
SouthMia Four year term Office City Mayor					
(VOTE FOR) 1					
Yes	4,235	75.58	801	1,449	1,985
No.	1,368	24.42	246	451	671
Total	5,603		1,047	1,900	2,656
Over Votes	3		0	1	2
Under Votes	592		133	180	279

	TOTAL VOTES	%	ED	VBM	EV
SouthMia Bond Parks/Rec/PublicWorks/Safety					
(VOTE FOR) 1					
For Bonds	3,263	60.17	656	1,099	1,508
Against Bonds	2,160	39.83	365	749	1,046
Total	5,423		1,021	1,848	2,554
Over Votes	2		0	2	0
Under Votes	773		159	231	383
Surfside Resid Lots b/w Collins/Harding Ave					
(VOTE FOR) 1					
Yes	1,483	55.88	389	508	586
No.	1,171	44.12	282	354	535
Total	2,654		671	862	1,121
Over Votes	1		0	0	1
Under Votes	298		84	86	128
Surfside Resid Lots West of Harding Ave					
(VOTE FOR) 1					
Yes	1,510	57.28	389	533	588
No.	1,126	42.72	277	324	525
Total	2,636		666	857	1,113
Over Votes	1		0	0	1
Under Votes	316		89	91	136
Surfside Prohibition of Lot Subdivision					
(VOTE FOR) 1					
Yes	1,414	53.99	356	486	572
No.	1,205	46.01	309	369	527
Total	2,619		665	855	1,099
Over Votes	2		1	0	1
Under Votes	332		89	93	150
Surfside Collection Obligations due to Town					
(VOTE FOR) 1					
Yes	1,567	60.18	415	561	591
No.	1,037	39.82	249	285	503
Total	2,604		664	846	1,094
Over Votes	0		0	0	0
Under Votes	349		91	102	156
Surfside Prohibit Dev/Constr Point Lake					
(VOTE FOR) 1					
Yes	1,641	63.68	419	579	643
No.	936	36.32	237	254	445
Total	2,577		656	833	1,088
Over Votes	1		0	1	0
Under Votes	375		99	114	162

	TOTAL VOTES	%	ED	VBM	EV
WestMia Amend Charter Comm citywide seats					
(VOTE FOR) 1					
Yes	1,554	59.20	208	364	982
No.	1,071	40.80	106	292	673
Total	2,625		314	656	1,655
Over Votes	1		0	0	1
Under Votes	452		81	70	301
WestMia Change Mayor Term to Four-year Term					
(VOTE FOR) 1					
Yes	1,700	62.52	230	372	1,098
No.	1,019	37.48	97	306	616
Total	2,719		327	678	1,714
Over Votes	0		0	0	0
Under Votes	359		68	48	243

*** Official Results ***
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

We, the undersigned, VICTORIA FERRER, County Judge, Chairperson, MIESHA DARROUGH, County Judge, Substitute Member, CHRISTINA WHITE, Supervisor of Elections, Member, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the Fifteenth day of November, 2024 A.D., and proceeded publicly to canvass the votes given for the Proposed Amendments to the Constitution of the State of Florida and Proposed Amendments to the Constitution of the State of Florida Referendums on the Fifth day of November, 2024 A.D. as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE IX, SECTION 4; ARTICLE XII
PARTISAN ELECTION OF MEMBERS OF DISTRICT SCHOOL BOARDS

Proposing amendments to the State Constitution to require members of a district school board to be elected in a partisan election rather than a nonpartisan election and to specify that the amendment only applies to elections held on or after the November 2026 general election. However, partisan primary elections may occur before the 2026 general election for purposes of nominating political party candidates to that office for placement on the 2026 general election ballot.

Yes for Approval	569,902	votes
No for Rejection	415,078	votes

NO. 2
CONSTITUTIONAL AMENDMENT
ARTICLE I, SECTION 28
RIGHT TO FISH AND HUNT

Proposing an amendment to the State Constitution to preserve forever fishing and hunting, including by the use of traditional methods, as a public right and preferred means of responsibly managing and controlling fish and wildlife. Specifies that the amendment does not limit the authority granted to the Fish and Wildlife Conservation Commission under Section of Article IV of the State Constitution.

Yes for Approval	659,670	votes
No for Rejection	348,269	votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 29
ADULT PERSONAL USE OF MARIJUANA

Allows adults 21 years or older to possess, purchase, or use marijuana products and marijuana accessories for non-medical personal consumption by smoking, ingestion, or otherwise; allows Medical Marijuana Treatment Centers, and other state licensed entities, to acquire, cultivate, process, manufacture, sell, and distribute such products and accessories. Applies to Florida law; does not change, or immunize violations of, federal law. Establishes possession limits for personal use. Allows consistent legislation. Defines terms. Provides effective date.

Yes for Approval	510,124	votes
No for Rejection	525,479	votes

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE 1, NEW SECTION
AMENDMENT TO LIMIT GOVERNMENT INTERFERENCE WITH ABORTION

No law shall prohibit, penalize, delay, or restrict abortion before viability or when necessary to protect the patient's health, as determined by the patient's healthcare provider. This amendment does not change the Legislature's constitutional authority to require notification to a parent or guardian before a minor has an abortion.

Yes for Approval	618,188	votes
No for Rejection	435,185	votes

NO. 5
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6; ARTICLE XII
ANNUAL ADJUSTMENTS TO THE VALUE OF CERTAIN HOMESTEAD EXEMPTIONS

Proposing an amendment to the State Constitution to require an annual adjustment for inflation to the value of current or future homestead exemptions that apply solely to levies other than school district levies and for which every person who has legal or equitable title to real estate and maintains thereon the permanent residence of the owner, or another person legally or naturally dependent upon the owner is eligible. This amendment takes effect January 1, 2025.

Yes for Approval	727,312	votes
No for Rejection	289,333	votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VI, SECTION 7
REPEAL OF PUBLIC CAMPAIGN FINANCING REQUIREMENT

Proposing the repeal of the provision in the State Constitution which requires public financing for campaigns of candidates for elective statewide office who agree to campaign spending limits.

Yes for Approval	518,693	votes
No for Rejection	474,734	votes

COUNTY NONBINDING STRAW BALLOT PUBLIC WI-FI

County Nonbinding Straw Ballot Public Wi-Fi

Yes for Approval	777,088	votes
No for Rejection	235,691	votes

BALHARBOUR LEVY HOMELESS/DOMESTIC ABUSE TAX

BalHarbour Levy Homeless/Domestic Abuse Tax

Yes for Approval	436	votes
No for Rejection	899	votes

CUTLERBAY PUBLIC ENGAGEMENT MODES OF COMM

CutlerBay Public Engagement Modes of Comm

Yes for Approval	16,925	votes
No for Rejection	3,380	votes

CUTLERBAY TOWN LAWS ENVIRONMENT STEWARDSHIP

CutlerBay Town Laws Environment Stewardship

Yes for Approval	17,230	votes
No for Rejection	3,193	votes

DORAL CLARIFY FORM OF GOVERNMENT

Doral Clarify Form of Government

Yes for Approval	10,965	votes
No for Rejection	12,861	votes

DORAL CREATE COMMITTEES/APPOINTMENT MEMBERS

Doral Create Committees/Appointment Members

Yes for Approval	12,868	votes
No for Rejection	10,813	votes

DORAL COUNCIL AUTH MAYOR/GOVERN ENTITIES

Doral Council Auth Mayor/Govern Entities

Yes for Approval	14,666	votes
No for Rejection	9,147	votes

DORAL SERVICE MAYOR POSITION COUNCILMEMBER

Doral Service Mayor Position Councilmember

Yes for Approval	15,406	votes
No for Rejection	8,531	votes

DORAL MAYOR AND COUNCILMEMBER COMPENSATION

Doral Mayor and Councilmember Compensation

Yes for Approval	12,811	votes
No for Rejection	11,174	votes

DORAL PROCESS APPOINT CITY MANAGER

Doral Process Appoint City Manager

Yes for Approval	16,189	votes
No for Rejection	7,372	votes

DORAL PROCESS APPOINT CITY BOARDS/AGENCIES

Doral Process Appoint City Boards/Agencies

Yes for Approval	15,132	votes
No for Rejection	9,266	votes

DORAL ELIMINATION RUN-OFF ELECTIONS

Doral Elimination Run-off Elections

Yes for Approval	12,775	votes
No for Rejection	12,115	votes

DORAL APPOINT CHRTR REV COMM/REQ MEMBERS

Doral Appoint Chrtr Rev Comm/Req Members

Yes for Approval	11,398	votes
No for Rejection	12,804	votes

DORAL OFC CHRTR ENFORCE/OFC INSP GENERAL

Doral Ofc Chrtr Enforce/Ofc Insp General

Yes for Approval	19,042	votes
No for Rejection	5,381	votes

MIA CONTINUOUS RESIDENCY MAYOR/COMMISSIONER

Mia Continuous Residency Mayor/Commissioner

Yes for Approval	111,834	votes
No for Rejection	15,626	votes

MIA REV DEVELOP PARROT JUNGLE WATSON ISLAND

Mia Rev Develop Parrot Jungle Watson Island

Yes for Approval	74,386	votes
No for Rejection	52,619	votes

MIA REV MIXED-USE LEASES ON WATSON ISLAND

Mia Rev Mixed-Use Leases on Watson Island

Yes for Approval	77,582	votes
No for Rejection	47,780	votes

MIA CHANGE RUNOFF DATE

Mia Change Runoff Date

Yes for Approval	79,929	votes
No for Rejection	45,773	votes

MIABCH CITIZENSBILLRIGHTS ETHICS COMMISSION

MiaBch CitizensBillRights Ethics Commission

Yes for Approval	24,604	votes
No for Rejection	5,670	votes

MIABCH CITIZENSBILLRIGHTS CIRCOURT/FORFEIT

MiaBch CitizensBillRights CirCourt/Forfeit

Yes for Approval	20,157	votes
No for Rejection	8,779	votes

MIABCH SALE/LEASE CITY PROPERTY AGREEMENTS

MiaBch Sale/Lease City property agreements

Yes for Approval	22,451	votes
No for Rejection	7,123	votes

MIABCH RUNOFF ELECTION DATE/INSTALL/OFCTERM

MiaBch Runoff Election Date/Install/OfcTerm

Yes for Approval	22,492	votes
No for Rejection	7,649	votes

MIABCH PUBLIC HEARINGS/NOTICE ORDINANCES

MiaBch Public Hearings/Notice Ordinances

Yes for Approval	23,411	votes
No for Rejection	7,266	votes

MIABCH VACANCIES IN CITY COMMISSION

MiaBch Vacancies in City Commission

Yes for Approval	20,925	votes
No for Rejection	9,393	votes

MIABCH CHARTER LANGUAGE TO LAW/CURRENT USE

MiaBch Charter Language to Law/Current Use

Yes for Approval	24,012	votes
No for Rejection	4,909	votes

MIAGARDENS CITY MANAGER RESIDENCY REQUIRE

MiaGardens City Manager Residency Require

Yes for Approval	23,511	votes
No for Rejection	18,108	votes

MIASPRINGS TERMS OF OFC/NOVEMBER ELECTIONS

MiaSprings Terms of Ofc/November Elections

Yes for Approval	3,074	votes
No for Rejection	3,694	votes

NBAYVILLAGE PUBLIC NOTICE REQUIREMENTS

NBayVillage Public Notice Requirements

Yes for Approval	2,347	votes
No for Rejection	508	votes

NBAYVILLAGE EMPLOYEES VILLAGE CLERK'S OFC

NBayVillage Employees Village Clerk's Ofc

Yes for Approval	2,391	votes
No for Rejection	433	votes

NBAYVILLAGE CONT RESIDENCY REQUIREMENT

NBayVillage Cont Residency Requirement

Yes for Approval	2,679	votes
No for Rejection	211	votes

NBAYVILLAGE QUALIFYING PERIOD

NBayVillage Qualifying Period

Yes for Approval	2,238	votes
No for Rejection	477	votes

NBAYVILLAGE SINGLE FAMILY PROPERTY

NBayVillage Single Family Property

Yes for Approval	2,253	votes
No for Rejection	616	votes

NBAYVILLAGE LIMIT ON VILLAGE DEBT

NBayVillage Limit On Village Debt

Yes for Approval	1,959	votes
No for Rejection	798	votes

NBAYVILLAGE CHRTR NONSUBSTANTIVE/TECHUPDATE

NBayVillage Chrtr NonSubstantive/TechUpdate

Yes for Approval	2,177	votes
No for Rejection	590	votes

PINECREST TERM LIMITS MAYOR/COUNCILMEMBER

Pinecrest Term Limits Mayor/Councilmember

Yes for Approval	4,233	votes
No for Rejection	6,036	votes

PINECREST PARTIAL TERMS OFC LESS TWO YEARS

Pinecrest Partial Terms Ofc Less Two Years

Yes for Approval	4,605	votes
No for Rejection	5,521	votes

PINECREST CALC TERM LIMITS/GAP IN SERVICE

Pinecrest Calc Term Limits/Gap in Service

Yes for Approval	3,797	votes
No for Rejection	6,188	votes

PINECREST METHOD FILLING VACANCIES IN OFC

Pinecrest Method Filling Vacancies in Ofc

Yes for Approval	5,306	votes
No for Rejection	4,603	votes

PINECREST UPDATE CHRTR ELECTIONS TIMELINES

Pinecrest Update Chrtr Elections Timelines

Yes for Approval	6,429	votes
No for Rejection	3,449	votes

SOUTHMIA PURCHASE LIMIT ORDINANCE CITY COMM

SouthMia Purchase Limit Ordinance City Comm

Yes for Approval	3,271	votes
No for Rejection	2,212	votes

SOUTHMIA FOUR YEAR TERM OFFICE CITY MAYOR

SouthMia Four year term Office City Mayor

Yes for Approval	4,235	votes
No for Rejection	1,368	votes

SOUTHMIA BOND PARKS/REC/PUBLICWORKS/SAFETY

SouthMia Bond Parks/Rec/PublicWorks/Safety

Yes for Approval	3,263	votes
No for Rejection	2,160	votes

SURFSIDE RESID LOTS B/W COLLINS/HARDING AVE

Surfside Resid Lots b/w Collins/Harding Ave

Yes for Approval	1,483	votes
No for Rejection	1,171	votes

SURFSIDE RESID LOTS WEST OF HARDING AVE

Surfside Resid Lots West of Harding Ave

Yes for Approval	1,510	votes
No for Rejection	1,126	votes

SURFSIDE PROHIBITION OF LOT SUBDIVISION

Surfside Prohibition of Lot Subdivision

Yes for Approval	1,414	votes
No for Rejection	1,205	votes

SURFSIDE COLLECTION OBLIGATIONS DUE TO TOWN

Surfside Collection Obligations due to Town

Yes for Approval	1,567	votes
No for Rejection	1,037	votes

SURFSIDE PROHIBIT DEV/CONSTR POINT LAKE

Surfside Prohibit Dev/Constr Point Lake

Yes for Approval	1,641	votes
No for Rejection	936	votes

WESTMIA AMEND CHARTER COMM CITYWIDE SEATS

WestMia Amend Charter Comm citywide seats

Yes for Approval	1,554	votes
No for Rejection	1,071	votes

WESTMIA CHANGE MAYOR TERM TO FOUR-YEAR TERM

WestMia Change Mayor Term to Four-year Term

Yes for Approval	1,700	votes
No for Rejection	1,019	votes

We Certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has compared the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

Victoria Lener 11/15/24
COUNTY JUDGE, CHAIRPERSON

Nadia S. Daniel 11/15/2024
COUNTY JUDGE, SUBSTITUTE MEMBER

11/15/24
SUPERVISOR OF ELECTIONS, MEMBER

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

We, the undersigned, VICTORIA FERRER, County Judge, Chairperson, MIESHA DARROUGH, County Judge, Substitute Member, CHRISTINA WHITE, Supervisor of Elections, Member, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the Fifteenth day of November, 2024 A.D., and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **Nonpartisan Election** held on the Fifth day of November, 2024 A.D., as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice Renatha Francis of the Supreme Court

Yes	625,479 votes
No	331,121 votes

Retention of Justice Meredith Sasso of the Supreme Court

Yes	607,862 votes
No	342,114 votes

Retention of Judge Kevin M. Emas of the Third District Court of Appeal

Yes	698,469 votes
No	245,658 votes

Retention of Judge Ivan F. Fernandez of the Third District Court of Appeal

Yes	663,794 votes
No	277,450 votes

Retention of Judge Norma Shepard Lindsey of the Third District Court of Appeal

Yes	641,220 votes
No	295,041 votes

For County Court Judge, Group 29, the whole number of votes cast was 918,728 of which

Christopher Benjamin	received	476,814 votes
Alina Salcines Restrepo	received	441,914 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For School Board, District 3, the whole number of votes cast was 110,761 of which

Joseph "Joe" Geller	received	60,740 votes
Martin Karp	received	50,021 votes

For School Board, District 7, the whole number of votes cast was 126,970 of which

Mary Blanco	received	86,182 votes
Maxeme "Max" Tuchman	received	40,788 votes

For County Commissioner, District 7, the whole number of votes cast was 101,295 of which

Cindy Lerner	received	43,960 votes
Raquel A. Regalado	received	57,335 votes

For Aventura City Commissioner Seat 1, the whole number of votes cast was 14,761 of which

Gustavo F. Blachman	received	7,075 votes
Michael Isaac Jacobs	received	5,979 votes
Alberto Zaltzberg	received	1,707 votes

For Aventura City Commissioner Seat 2, the whole number of votes cast was 14,536 of which

Cindy Orlinsky	received	9,796 votes
Gary Pyott	received	4,740 votes

For Bal Harbour Council Member District 4, the whole number of votes cast was 1,272 of which

David Albaum	received	538 votes
Alejandro Levy	received	734 votes

For Biscayne Park Commissioner, the whole number of votes cast was 2,036 of which

Ryan Huntington	received	801 votes
MacDonald Kennedy	received	802 votes
Daniel R. Samaria	received	433 votes

For Cutler Bay Council Member Seat 2, the whole number of votes cast was 19,278 of which

Brook De Melo Gomes	received	9,201 votes
Suzy Lord	received	10,077 votes

For Doral Mayor, the whole number of votes cast was 25,749 of which

Christi Fraga	received	20,405 votes
Roxanna Garay	received	5,344 votes

For Doral Councilmember Seat 1, the whole number of votes cast was 24,841 of which

Ivette Gonzalez Petkovich	received	9,845 votes
Rafael Pineyro	received	14,996 votes

For Doral Councilmember Seat 3, the whole number of votes cast was 23,352 of which

Juan Carlos Esquivel	received	8,324 votes
Nicole Reinoso	received	10,428 votes
Irina Vilarino	received	4,600 votes

For El Portal Councilperson Seat 4, the whole number of votes cast was 1,029 of which

Luis M. Pirela	received	511 votes
Charles Winters	received	518 votes

For Key Biscayne Village Council, the whole number of votes cast was 13,438 of which

Michael F. Bracken	received	2,391 votes
Franklin H. Caplan	received	2,376 votes
Charles Hyatt Collins	received	1,314 votes
Mark E. Fried	received	2,004 votes
Nicolas Lopez-Jenkins	received	2,152 votes
Nancy Stoner	received	3,201 votes

For Medley Mayor, the whole number of votes cast was 559 of which

Roberto Martell	received	238 votes
Lily Stefano	received	321 votes

For Medley Council Member, the whole number of votes cast was 1,017 of which

Ernesto Fuster	received	180 votes
Arturo "Artie" Jinete	received	259 votes
Ivan Pacheco	received	157 votes
Karina Pacheco	received	163 votes
Lourdes Rodriguez	received	258 votes

For Miami Gardens Council Member Seat 5, the whole number of votes cast was 42,302 of which

Karen Hunter-Jackson	received	16,357 votes
Linda Julien	received	25,945 votes

For Miami Lakes Mayor, the whole number of votes cast was 15,708 of which

Josh Dieguez	received	7,320 votes
Tony Fernandez	received	6,593 votes
Yuniett Gonzalez	received	1,795 votes

For Miami Lakes Councilmember Seat 1, the whole number of votes cast was 14,771 of which

Angelo Cuadra Garcia	received	8,015 votes
Mario O. Pinera Jr.	received	6,756 votes

For N.Bay Village Treasure Island Commissioner, the whole number of votes cast was 2,830 of which

Doris Acosta	received	1,602 votes
Jose R. Parada Jr.	received	1,228 votes

For North Miami Mayor, the whole number of votes cast was 19,652 of which

Naomi Esther Blemur	received	3,568 votes
Daphne Campbell	received	4,408 votes
Alix Desulme	received	7,226 votes
Hector Medina	received	4,450 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For North Miami Councilperson District 1, the whole number of votes cast was 4,477 of which

Kevin A. Burns	received	1,926 votes
Vanessa Pierre	received	1,366 votes
Evan A. Shields	received	607 votes
Jessica Wolland	received	578 votes

For North Miami Councilperson District 4, the whole number of votes cast was 6,307 of which

Daniel Calixte	received	1,036 votes
Charlie Nacivre Charles	received	1,020 votes
Pierre Frantz Charles	received	2,777 votes
Beverly Hilton	received	900 votes
Bethynel "Betty" Vega	received	574 votes

For North Miami Beach Group 1 Mayor, the whole number of votes cast was 13,287 of which

Michael Joseph	received	7,374 votes
Evan S. Piper	received	5,913 votes

For North Miami Beach Group 3 Commissioner, the whole number of votes cast was 13,036 of which

Hubert Dube	received	3,216 votes
Daniela Jean	received	6,401 votes
Margaret Mary "Margie" Love	received	3,419 votes

For North Miami Beach Group 5 Commissioner, the whole number of votes cast was 12,160 of which

McKenzie Fleurimond	received	7,415 votes
Ketley Joachim	received	4,745 votes

For North Miami Beach Group 7 Commissioner, the whole number of votes cast was 12,680 of which

Eunice Flowers	received	1,847 votes
Ellis Keeter	received	1,434 votes
Maggy Belizaire Lopez	received	2,339 votes
Lynn Su	received	3,235 votes
Paule Villard	received	3,825 votes

For Opa-locka Commissioners, the whole number of votes cast was 5,426 of which

Retevea Bain-Walden	received	476 votes
Chris Davis	received	851 votes
Brian Dennis	received	634 votes
Audrey Dominguez	received	746 votes
Joseph L. Kelley	received	1,719 votes
Luis Santiago	received	1,000 votes

For Palmetto Bay Vice Mayor, the whole number of votes cast was 13,288 of which

Mark Merwitzer	received	6,683 votes
Leanne Tellam	received	6,605 votes

For Palmetto Bay Council Member Seat 2, the whole number of votes cast was 13,031 of which

Steve Cody	received	7,522 votes
David M. Singer	received	5,509 votes

For Pinecrest Councilmember Seat 3, the whole number of votes cast was 10,175 of which

Shannon del Prado	received	6,746 votes
Ralph Sanchez	received	3,429 votes

For South Miami Mayor, the whole number of votes cast was 4,970 of which

Javier Fernandez	received	4,970 votes

For South Miami Commissioner Group II, the whole number of votes cast was 5,597 of which

Daniel Guerra	received	2,704 votes
Danny Rodriguez	received	2,893 votes

For South Miami Commissioner Group III, the whole number of votes cast was 3,976 of which

Brian Corey	received	3,976 votes

For Sunny Isles Beach Commissioner Seat 1, the whole number of votes cast was 7,402 of which

Patricia Alvarez	received	2,630 votes
George Bardmesser	received	1,355 votes
Jerry Joseph	received	2,855 votes
Iracilda Lichtinger	received	562 votes

For Sunny Isles Beach Commissioner Seat 3, the whole number of votes cast was 7,360 of which

Greg Capra	received	3,583 votes
Fabiola Stuyvesant	received	3,777 votes

For Virginia Gardens Council, the whole number of votes cast was 1,370 of which

Richard L. Block	received	404 votes
Debra A. Conover	received	421 votes
Gabriel Fernandez	received	545 votes

For Cutler Cay Community Development District, Seat 3, the whole number of votes cast was 731 of which

Albert Collazo	received	513 votes
Christopher T. Musser	received	218 votes

For Cutler Cay Community Development District, Seat 4, the whole number of votes cast was 697 of which

Donna Fishbein	received	285 votes
Alexandra Penn Williams	received	412 votes

For Downtown Doral South Community Development District, Seat 4, the whole number of votes cast was 887 of which

Adolfo William Alfonso	received	278 votes
Francisco Bird	received	441 votes
Guillermo J. Silva Malavé	received	168 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For Downtown Doral South Community Development District, Seat 5, the whole number of votes cast was 882 of which

Lidy C. Hernandez Perez	received	447 votes
Jaime Mercado	received	435 votes

For Islands at Doral III Community Development District, Seat 4, the whole number of votes cast was 1,511 of which

Victoria González	received	1,037 votes
Gerardo A. Verde	received	474 votes

For Landmark at Doral Community Development District, Seat 5, the whole number of votes cast was 831 of which

Juan Javier De Maqua	received	525 votes
Yasenka Peterson	received	306 votes

For Majorca Isles Community Development District, Seat 1, the whole number of votes cast was 675 of which

Reginald Andre	received	304 votes
Theodis Tyrone Kendrick	received	214 votes
Nathan Price	received	157 votes

For Majorca Isles Community Development District, Seat 2, the whole number of votes cast was 673 of which

Eric Moss	received	332 votes
Tamara Price	received	341 votes

***** Official Results *****

CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

We Certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has compared the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

Victoria Lener
COUNTY JUDGE, CHAIRPERSON 11/15/24

Miesha S. Davis 11/15/2024
COUNTY JUDGE, SUBSTITUTE MEMBER

11/15/24
SUPERVISOR OF ELECTIONS, MEMBER

***** Official Results *****

CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

We, the undersigned, VICTORIA FERRER, County Judge, Chairperson, MIESHA DARROUGH, County Judge, Substitute Member, CHRISTINA WHITE, Supervisor of Elections, Member, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the Fifteenth day of November, 2024 A.D., and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **General Election** held on the Fifth day of November, 2024 A.D., as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

For Electors for President and Vice President, the whole number of votes cast was 1,094,105 of which number the nominated electors for

Donald J. Trump and JD Vance (REP)	received	605,590 votes
Kamala D. Harris and Tim Walz (DEM)	received	480,355 votes
Chase Oliver and Mike ter Maat (LPF)	received	2,096 votes
Claudia De la Cruz and Karina Garcia (PSL)	received	1,308 votes
Randall Terry and Stephen Broden (CPF)	received	476 votes
Peter Sonski and Lauren Onak (ASP)	received	455 votes
Jill Stein and Rudolph Ware (GRE)	received	3,813 votes
Shiva Ayyadurai and Crystal Ellis (WRI)	received	12 votes
Cherunda Fox and Harlan McVay Jr (WRI)	received	0 votes

For United States Senator, the whole number of votes cast was 1,076,114 of which

Rick Scott (REP)	received	585,445 votes
Debbie Mucarsel-Powell (DEM)	received	477,598 votes
Feena Bonoan (LPF)	received	4,737 votes
Tuan TQ Nguyen (NPA)	received	4,088 votes
Ben Everidge (NPA)	received	4,244 votes
Howard Knepper (WRI)	received	2 votes

For Representative in Congress, District 24, the whole number of votes cast was 254,942 of which

Jesus Gabriel Navarro (REP)	received	84,231 votes
Frederica Wilson (DEM)	received	170,692 votes
Lavern Spicer (WRI)	received	19 votes

For Representative in Congress, District 26, the whole number of votes cast was 194,628 of which

Mario Diaz-Balart (REP)	received	138,467 votes
Joey Atkins (DEM)	received	56,161 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For Representative in Congress, District 27, the whole number of votes cast was 329,867 of which

Maria Elvira Salazar (REP)	received	199,159 votes
Lucia Báez-Geller (DEM)	received	130,708 votes

For Representative in Congress, District 28, the whole number of votes cast was 282,281 of which

Carlos A. Gimenez (REP)	received	183,428 votes
Phil Ehr (DEM)	received	98,853 votes

For State Senator, District 37, the whole number of votes cast was 35,186 of which

Imtiaz Mohammad (REP)	received	15,282 votes
Jason Pizzo (DEM)	received	19,904 votes

For State Senator, District 39, the whole number of votes cast was 190,905 of which

Bryan Avila (REP)	received	133,270 votes
Charles A. Lewis I (DEM)	received	57,635 votes

For State Representative, District 106, the whole number of votes cast was 74,886 of which

Fabián Basabe (REP)	received	38,386 votes
Joe Saunders (DEM)	received	35,229 votes
Mo Saunders Scott (NPA)	received	1,271 votes

For State Representative, District 110, the whole number of votes cast was 70,088 of which

Tom Fabricio (REP)	received	49,881 votes
Stanley "J.P." Jean-Poix (DEM)	received	20,207 votes

For State Representative, District 111, the whole number of votes cast was 68,180 of which

David Borrero (REP)	received	45,942 votes
Laura F. Kelley (DEM)	received	22,238 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For State Representative, District 112, the whole number of votes cast was 55,107 of which

Alex Rizo (REP)	received	40,199 votes
Jacqueline "Jackie" Gil-Abarzua (DEM)	received	14,908 votes

For State Representative, District 113, the whole number of votes cast was 61,215 of which

Vicki Lopez (REP)	received	33,461 votes
Jacqueline "Jackie" Gross-Kellogg (DEM)	received	27,754 votes

For State Representative, District 114, the whole number of votes cast was 79,243 of which

Demi Busatta Cabrera (REP)	received	46,249 votes
Matthew John Bornstein (DEM)	received	32,994 votes

For State Representative, District 115, the whole number of votes cast was 92,591 of which

Omar Blanco (REP)	received	54,952 votes
Norma Perez Schwartz (DEM)	received	37,639 votes

For State Representative, District 116, the whole number of votes cast was 77,074 of which

Daniel A. Perez (REP)	received	52,964 votes
Nicolas Ramos (DEM)	received	24,110 votes

For State Representative, District 117, the whole number of votes cast was 61,170 of which

Beatrice Slawson (REP)	received	28,823 votes
Kevin Chambliss (DEM)	received	32,347 votes

For State Representative, District 118, the whole number of votes cast was 85,401 of which

Mike Redondo (REP)	received	58,355 votes
Joel Vodola (DEM)	received	27,046 votes

***** Official Results *****
CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

For State Representative, District 119, the whole number of votes cast was 84,702 of which

Juan Carlos Porras (REP)	received	54,735 votes
Marcos Reyes (DEM)	received	29,967 votes

For State Representative, District 120, the whole number of votes cast was 32,665 of which

James "Jim" Vernon Mooney Jr (REP)	received	19,962 votes
Michael Travis (DEM)	received	12,703 votes

For Clerk of the Circuit Court and Comptroller, the whole number of votes cast was 1,045,244 of which

Juan Fernandez-Barquin (REP)	received	580,202 votes
Annette Taddeo (DEM)	received	464,947 votes
Rubin Young (WRI)	received	95 votes

For Sheriff, the whole number of votes cast was 1,048,874 of which

Rosanna "Rosie" Cordero-Stutz (REP)	received	583,505 votes
James Reyes (DEM)	received	465,369 votes

For Property Appraiser, the whole number of votes cast was 1,045,246 of which

Tomas Regalado (REP)	received	595,819 votes
Marisol Zenteno (DEM)	received	449,427 votes

For Tax Collector, the whole number of votes cast was 1,036,756 of which

Dariel Fernandez (REP)	received	576,892 votes
David Richardson (DEM)	received	459,864 votes

For Supervisor of Elections, the whole number of votes cast was 1,038,831 of which

Alina Garcia (REP)	received	580,061 votes
Juan-Carlos "J.C." Planas (DEM)	received	458,770 votes

***** Official Results *****

CERTIFICATE OF COUNTY CANVASSING BOARD
MIAMI-DADE COUNTY

We Certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has compared the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

Victoria Lener
COUNTY JUDGE, CHAIRPERSON 11/15/24

Miesha D Jarrett 11/15/2024
COUNTY JUDGE, SUBSTITUTE MEMBER

11/15/24
SUPERVISOR OF ELECTIONS, MEMBER